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**Graduate School Catalog
1985-1987**

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IUP RESERVES THE RIGHT TO REPEAL, CHANGE, OR AMEND THE POLICIES, REGULATIONS, AND COURSES CONTAINED IN THIS CATALOG AT ANY TIME. TUITION AND FEES ARE ALSO SUBJECT TO CHANGE.

PRESS DATE: DECEMBER, 1984

**[Indiana University
of Pennsylvania
1985-1987**

**The Graduate School
Catalog]**

Indiana, Pennsylvania 15705

Telephone: (412) 357-2222



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THE GRADUATE SCHOOL CALENDAR

SUMMER SESSION 1985

- | | |
|----------|---|
| April 1 | Students who plan to take graduate work during the 1985 Summer Session must have an application for graduate study approved on or before this date. |
| June 1 | Final date to submit thesis proposal to the College Dean in order to complete requirements for the degree in Summer 1985. |
| June 1 | Prospective August 1985 graduates must have filed an application for graduation. |
| July 1 | Final date for presentation of completed thesis to major professor in order to complete requirements for the degree in the Summer 1985. |
| August 1 | Completed and corrected thesis must be on file with the College Dean for Summer 1985 degree. |

FALL SEMESTER 1985

- | | |
|------------|--|
| July 1 | Students who plan to take graduate work during the fall semester must have an application for graduate study approved on or before this date. |
| October 1 | Final date to submit thesis proposal to the College Dean in order to complete requirements for the degree in the Fall Semester 1985. |
| October 1 | Prospective December 1985 graduates must have filed an application for graduation. |
| November 1 | Final date for presentation of completed thesis to major professor in order to complete requirements for the degree in the Fall Semester 1985. |
| December 1 | Completed and corrected thesis to be filed with the College Dean for degree in Fall Semester 1985. |

SPRING SEMESTER 1986

- November 1 Students who plan to take graduate work during the Spring Semester must have an application for graduate study approved on or before this date.
- March 1 Final date to submit thesis proposal to the College Dean in order to complete requirements for the degree in the Spring Semester 1986.
- March 1 Prospective May 1986 graduates must have filed an application for graduation.
- April 1 Final date for presentation of completed thesis to major professor in order to complete requirements for the degree in the Spring 1986.
- May 1 Completed and corrected thesis must be on file with the College Dean for degree in Spring Semester.

SUMMER SESSION 1986

Dates for 1986 Summer Session have not been set as of this printing. Please contact The Graduate School for further information.

- April 1 Students who plan to take graduate work during 1986 Summer Session must have an application for graduate study approved on or before this date.
- June 1 Final date to submit thesis proposal to the College Dean in order to complete requirements for the degree in Summer 1986.
- June 1 Prospective August 1986 graduates must have filed an application for graduation.
- July 1 Final date for presentation of completed thesis to major professor in order to complete requirements for the degree in the Summer 1986.
- August 1 Completed and corrected thesis must be on file with the College Dean for Summer 1986 degree.

FALL SEMESTER 1986

- July 1 Students who plan to take graduate work during the Fall Semester must have an application for graduate study approved on or before this date.
- October 1 Final date to submit thesis proposal to the College Dean in order to complete requirements for the degree in the Fall Semester 1986.

- October 1 Prospective December 1986 graduates must have filed an application for graduation.
- November 1 Final date for presentation of completed thesis to major professor in order to complete requirements for the degree in the Fall Semester 1986.
- December 1 Completed and corrected thesis to be filed with the College Dean for degree in Fall Semester 1986.

SPRING SEMESTER 1987

- November 1 Students who plan to take graduate work during the Spring Semester must have an application for graduate study approved on or before this date.
- March 1 Final date to submit thesis proposal to the College Dean in order to complete requirements for the degree in the Spring Semester 1987.
- March 1 Prospective May 1987 graduates must have filed an application for graduation.
- April 1 Final date for presentation of completed thesis to major professor in order to complete requirements for the degree in the Spring 1987.
- May 1 Completed and corrected thesis must be on file with the College Dean for degree in Spring Semester.

SUMMER SESSION 1987

Dates for 1987 Summer Session have not been set as of this printing. Please contact The Graduate School for further information.

- April 1 Students who plan to take graduate work during 1987 Summer Sessions must have an application for graduate study approved on or before this date.
- June 1 Final date to submit thesis proposal to the College Dean in order to complete requirements for the degree in Summer 1987.
- June 1 Prospective August 1987 graduates must have filed an application for graduation.
- July 1 Final date for presentation of completed thesis to major professor in order to complete requirements for the degree in the Summer 1987.
- August 1 Completed and corrected thesis must be on file with the College Dean for Summer 1987 degree.

TUITION AND FEES

REGULAR SEMESTER TUITION (Fall & Spring)

Full-Time Tuition for Pennsylvania Residents

\$785 for 9-15 semester hours (s.h.), then \$87 for each additional s.h.

Part-Time Tuition for Pennsylvania Residents

\$87 per semester hour (s.h.) for fewer than 9 s.h.

Full-Time Tuition for Non-Pennsylvania Residents

\$830 for 9-15 semester hours (s.h.), then \$92 for each additional s.h.

Part-Time Tuition for Non-Pennsylvania Residents

\$92 per semester hour (s.h.) for fewer than 9 s.h.

SUMMER SESSION TUITION

All Graduate Students (in-state and out-of-state) \$87 s.h.

Application Fee (non-refundable)\$10.00

Activity Fee—Semester Full-Time Students

(9 s.h. or more)\$36.00

Semester Part-Time Students

(8 s.h. or fewer)\$12.00

Main Summer Session

All Graduate Students\$26.00

Pre or Post Summer Session

All Graduate Students\$11.00

Health Fee—Semester Full-Time\$34.00

Pre Session\$ 7.00

Main Session\$14.00

Post Session\$ 7.00

Late Fee\$10.00/day up to \$20.00

Applied Music Fee per private instruction\$50.00

Auditor's Fee (Same as Tuition)

Graduation Fee\$20.00

Master's or Doctoral Cap, Hood and Gown FeeNominal

ALL FEES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Grades and transcripts may be withheld by IUP if a student is delinquent in paying any bill owed the University. Payment of the bill or establishment of a payment plan satisfactory to the University will be required for release of grades and/or transcripts.

University Refund Policy

The University must engage its faculty, assign Residence Hall space and make various other arrangements in advance of each term in accordance with the number of students who expressed their intent to be enrolled. When students withdraw from the University, they create vacancies which cannot be filled, and financial commitments for salaries and services by the University must be honored. The refund policy at IUP applies to all students enrolled in credit producing programs at the University either full-time or part-time.

Graduate students withdrawing from the University must process such withdrawal through the Graduate School Office. The official withdrawal date will be established by the Graduate School Office.

Students totally withdrawing from courses, upon receiving approval from the Graduate School, will forfeit a portion of the semester charges in accordance with the following schedule:

Withdrawal on Calendar Day Basis	Percentage of Student's Total Semester Charges to be Forfeited
4 days prior to the start of classes through 14 days	20%
15 through 21 days	30%
22 through 28 days	40%
29 through 35 days	50%
36 or beyond	100% (no refund)

The start of calendar days is defined as the first day of classes as scheduled on the University calendar.

During Summer Sessions, students totally withdrawing from the University, upon receiving approval from the Graduate School, will forfeit a portion of the total session charges in accordance with the following schedule:

Calendar Day of Withdrawal	Percentage of Student's Total Session Charges to be Forfeited
First class day through Fourth calendar day	50%
Fifth calendar day and beyond	100% (no refund)

The Associate Provost will determine the official start of classes for each semester or session. Refunds to students enrolled in credit-bearing summer conferences, institutes, workshops or tours of less than three weeks duration will be granted a 50% refund through the first day of the class (unless a no refund policy is required by the sponsor).

INDIVIDUAL COURSE WITHDRAWAL—A graduate student may cancel an individual course(s) up to four days prior to the first day of classes by notifying the **Registrar** in writing. If a student cancels a course(s) prior to the fourth day preceding the start of classes, no penalty will be charged and the student will receive 100% refund for the course(s) cancelled. No refunds will be made to full-time students who withdraw from individual courses after the fourth day preceding the first day of classes. Individual course withdrawal is defined as a reduction in class load but not total withdrawal from the University. Example: A student who registers for three courses and then withdraws from one or two classes but continues with the class or classes.

Part-time students will forfeit a portion of the credit-hour fee in accordance with the following schedule:

Calendar Day of Individual Course Withdrawal	Percentage of Student's Instructional Fee to be Forfeited
Fourth day prior to the first class day through 35 days	50%
36 and beyond	100% (no refund)

During Summer Sessions, part-time students will forfeit fees as follows. The student will forfeit 50% of the course charges from the first class day through the fourth calendar day. On the fifth calendar day and beyond, the student will forfeit 100% (no refund).

Refunds will be granted only for instructional fees. No refund will be granted to students who drop and add like number of credit hours.

WITHDRAWAL FROM UNIVERSITY SERVICES

Graduate students wishing to terminate residence hall or food service contracts must do so through the Office of Housing and Residence Life. This same office can provide information on dates and percentage of forfeiture.

OTHER REFUND POLICY PROVISIONS

No refunds will be granted to students who are suspended or expelled from classes, residence halls, and/or food service.

The Accounts Receivable Office, Administrative Annex, is responsible for implementing the refund policy. Students who wish to appeal a decision rendered by Accounts Receivable may do so through the Director of Accounting to the Vice President for Finance.

IUP

Location—IUP, the largest state-owned university in Pennsylvania's State System of Higher Education, is located in Indiana, Pennsylvania, a community of 26,000 about 55 miles northeast of Pittsburgh and 30 miles north of Johnstown. Situated in the Allegheny foothills, Indiana has a moderate climate conducive to study the year round and a wide variety of historical, cultural, and recreational facilities both immediately at hand and in neighboring population centers.

Library—The University Library Complex (Patrick J. Stapleton, Jr. Library and Rhodes R. Stabley Library) provides excellent facilities for graduate work with librarians readily available for assisting with specialized reference work. The Library is an officially designated Federal Depository. The holdings in Patrick J. Stapleton, Jr. Library include over 575,000 volumes of books, 1,700,000 units of microform, 4,000 indexed periodical subscriptions, and the government documents collection.

DIALOG on-line computer service for searching periodicals, and other sources is also available through the Reference Department of the library. Altogether, 180 data banks are searchable by DIALOG. A \$5.00 deposit is required of students using this service.

The Rhodes R. Stabley Library houses 50,000 units of media material and software together with facilities for listening and viewing. These services consist of the development of instructional systems such as student response, and personal self-instructional materials. In addition, the services provide photographic, sound recording and reproduction, design and production of conventional instructional materials; procurement, inventory, and maintenance of University multi-media equipment; developing and maintaining a 16mm film library.

Graduate students and faculty conducting research may apply for inter-library loans to supplement the library's holdings. Individual study carrels are available for graduate students conducting library research.

STAPLETON/STABLEY LIBRARY HOURS

Monday thru Thursday	7:45 a.m. - 10:30 p.m.
Friday	7:45 a.m. - 9:30 p.m.
Saturday	9:00 a.m. - 5:00 p.m.
Sunday	1:00 p.m. - 10:30 p.m.

Schedules for summer sessions and vacation periods are posted. The telephone number for the Main Desk is 357-2340.

The Computer Center—The Computer Center, established in July, 1963, provides computational support for undergraduate and graduate courses, faculty and student research, and the administrative requirements of the University. The computing capacity of the Center is provided by a large-scale disk oriented central processor which supports both time-sharing and batch processing services for the university community. Typewriter terminals, located both in the Computer Center and in various locations on campus, permit the use of the computer on a time-sharing basis. Key-punching facilities and a full complement of tabulating equipment are available in the Computer Center for student use. Remote job entry stations are located in the Computer Science Department and the College of Business, along with a large number of time-sharing terminals. Aid in the use of the computer and facilities may be obtained from user assistants on duty at the Computer Center, and from the Center's professional staff.

IUP's Computer Center plays an active part in the daily functioning of the University. It is the principal laboratory facility for computer-oriented courses and is used as a teaching aid in many classes involving statistical and numerical analyses and computer simulations. In addition, over 80 organizations outside the University make extensive use of IUP's computing facilities. The staff at the Center is actively involved in continuing work aimed at making computers a more effective and readily accessible tool for both the academic and administrative segments of the university community.

Testing Services—Testing programs at IUP are administered through the Academic Services and Testing Center. Among the national testing programs offered, the following are of particular interest to potential graduate students.

The **Graduate Record Examination (GRE)** is administered on nationally-established dates five times each year. In the Saturday morning sessions the general examinations (formerly called aptitude examinations) are offered; the advanced examinations (specializations) are offered in the afternoon sessions. Information and registration booklets are available from the Graduate School or from the Testing Center. Registration forms must be sent directly to ETS in Princeton, New Jersey.

The **Miller Analogies Test (MAT)** is administered by the Testing Center on a frequent schedule—usually monthly on a weekday afternoon. To register, contact the Testing Center (412-357-3050). All Graduate School applicants with a GPA of below 2.6 must take the MAT.

The **Graduate Management Admission Test (GMAT)** is administered on nationally-established dates. IUP is a regular center for some dates and can be a special center for other dates if 15 registrations are submitted to the Testing Center before the "special requests" deadline. Registrations for regular center dates, as listed in the GMAT booklet, are submitted directly to ETS. Information-registration booklets are available from the College of Business—MBA Coordinator or from the Testing Center.

The **National Teacher Examination (NTE)** is administered on four nationally-established dates. On two dates the common examinations are offered; on two other dates the area examinations (specializations) are offered. It is used generally by participating school systems for qualification

and/or selection of instructional staff. This test is used at IUP in admissions to the Supervisor of Guidance certificate program.

Information on graduate and professional school exams other than those used for IUP Graduate School programs is available through the Testing Center. Law School Admission Test (LSAT) information is also available in the office of the College of Humanities and Social Sciences. Medical College Admission Test (MCAT) information is available through the Dean of the College of Natural Sciences and Mathematics.

Arrangements can be made by advance contact for administration of tests adapted to visual, auditory, or physical handicaps.

The Testing Center is a service operation for the administration of tests and neither makes testing requirements nor offers interpretation of testing results. Commercial "How to Prepare for . . ." materials are available in the Co-op Store and other local bookstores. Questions concerning test requirements and desirable scores should be addressed to The Graduate School. Questions concerning specific registration matters and the test agency information-registration materials may be directed to the Academic Services and Testing Center, G-30 Sutton Hall (412-357-3050).

Career Services—The Office of Career Services, 302 Pratt Hall, is open to all IUP graduate students and alumni. Students and classes are invited to use the facilities and professional staff for assistance in career planning and development.

The primary functions of the Career Services program are: providing vocational planning assistance through conferences with professional career counselors; assembling a set of credentials for each student who submits the materials and making copies of these credentials available to prospective employers; cooperating with the faculty of the University to increase the overall awareness of current employment opportunities and trends; arranging for campus interviews; publicizing career information, especially regarding campus interviewing opportunities; preparing vacancy files and a current vacancy list which are made available to eligible candidates; maintaining a career information library; arranging for occupational information through meetings with representatives from education, business, industry, and government; conducting follow-up studies of graduates and assembling supply and demand data.

Each student is urged to obtain a packet of information in the Career Services Office and complete all the forms necessary to establish a credential file for employment purposes.



THE GRADUATE SCHOOL AT IUP

GENERAL INFORMATION

Graduate work was inaugurated at IUP in September, 1957.

Master of Arts, Master of Science, Master of Business Administration, Master of Education, Doctor of Education, Doctor of Philosophy, and Doctor of Psychology degrees are currently available. Non-degree programs leading to certification in various teaching and school service fields are also available.

In all graduate programs the objectives are (1) to encourage excellence and scholarship, (2) to provide depth in the student's special field, and (3) to stimulate enthusiasm for continued cultural and professional growth on the part of the student.

The Graduate School staff is assisted in its daily functioning by a) the Graduate Committee, a standing committee of the University Senate concerned with graduate program curricular and policy matters; b) the Graduate Student Assembly, an elected graduate student body representative of all campus academic departments offering graduate programs, and c) the chairpersons and graduate studies coordinators of departments offering graduate course work.

In addition to the degree and certification programs referred to above, IUP's Graduate School also maintains liaison with other graduate institutions in Pennsylvania. Students should contact The Graduate School for additional information.

ADMISSION

Admission to The Graduate School is required of all students who wish to take graduate courses for graduate credit. Each student applying for admission, either as an applicant for a graduate degree program or as an applicant for a non-degree program, must file with The Graduate School an application for admission and such other supporting documents as the school may specify. An Admissions Packet is supplied by the Graduate Office upon request. As a general rule application materials must be on file in the Graduate Office at least one month prior to the beginning of the semester or term in which the applicant plans to begin graduate work. Some exceptions to these deadlines exist; please refer to the Graduate Calendar on the opening pages of this catalog for specific program dates.

Requirements for Admission

1. An applicant must have a bachelor's degree from a college or university accredited by the Middle States Association of Colleges and Secondary Schools or an equivalent regional accrediting agency.
2. The applicant's undergraduate transcript (or transcripts collectively) must show a minimum cumulative quality point average of 2.6 on a 4.0 maximum scale. Occasionally, additional evidence of academic ability is required.
3. Graduate Record Examination (GRE) scores must be submitted prior to admission or during the student's first semester of course work by all students except MBA and M.S. in Business program applicants; the latter must submit General Management Admission Test (GMAT) scores. (These tests are described in detail earlier in this catalog.)
4. Most applicants requesting admission to programs leading to an MEd degree are required to have a Provisional Pennsylvania Teachers Certificate or its equivalent; all MEd degree applicants should be sure to inquire at their program's sponsoring department. MEd applicants who do not already have such certification where required must complete a planned program leading to certification prior to applying for MEd degree candidacy at IUP.

Graduate School admission means that students may program and register for graduate courses. Admission does not guarantee subsequent admission to candidacy for a degree, nor does it guarantee successful completion of requirements for a degree.

Admission Procedures

1. Each applicant must file with the Dean of The Graduate School a completed application form. Applications along with forms pertaining to items 2 and 3 below are included in the Admission's Packet. The Admission's Packet sent to Doctor of Psychology applicants differs somewhat from the regular packet, especially regarding item 3 below.

2. The application must be accompanied by one copy of an official transcript from each graduate and undergraduate institution attended, including IUP if the applicant is an IUP graduate. IUP graduates must ask the Registrar's Office to forward official transcripts to the Graduate School.
3. Each applicant must submit statements of recommendation from three individuals who are familiar with his/her background. At least two of the individuals must be persons familiar with the applicant's academic background.
4. All applicants must submit Graduate Record Examination (GRE) scores except MBA and M.S. in Business degree applicants, who must submit Graduate Management Admission Test (GMAT) scores. Information about both is contained in the Admission's Packet.
5. An application fee in the amount of \$10.00, non-refundable, must accompany the application. Please pay by check and make check payable to: IUP.

Admission Classifications

Applicants for admission to The Graduate School are notified of their admission status by The Graduate School Dean prior to the beginning of the term of planned study. Admission classifications are as follows:

1. **Pre-Candidacy Status.** Given to an applicant who plans to work toward a graduate degree and whose application file with The Graduate School is both complete and satisfactory. The pre-candidacy student may program, under departmental guidance, 6 to 12 graduate hours toward the degree being sought. Pre-Candidacy Status does not guarantee subsequent admission to candidacy.
2. **Special Graduate Standing.** Granted to applicants who indicate they do not plan to work toward a graduate degree but who wish to take graduate courses for which they are qualified. Applicants granted this standing who later wish to work toward a graduate degree must request reclassification by The Graduate School. Credits earned by a student having Special Graduate Standing may be applied to an IUP degree after the reclassified student has been awarded degree candidacy, provided the credits are deemed appropriate to the degree by the program's sponsoring department.
3. **Admission Denied.** Applicants denied admission to The Graduate School will receive a letter from the Graduate Dean indicating the reason for the denial.

Graduate Record and Other Examinations

All graduate school applicants must take the GENERAL (formerly called the Aptitude section) section of the Graduate Record Examination. The

following departments require that the Examination's ADVANCED section must also be taken for the degree or certification programs indicated:

Biology (MS and MEd)

Educational Psychology (MEd and School Psychology programs)

Elementary Education (EdD)

English (PhD)

Foreign Languages (German, MEd; Spanish, MA and MEd)

Music (MA, MEd)

Psychology (MA, Psy.D.)

Under certain conditions IUP applicants may be required to submit MAT (Miller Analogies Test) scores. Both Graduate Record and Miller Analogies examinations are administered by IUP's Testing Center; specific information about test availability can be obtained from the Center's director. Applicants taking such examinations, whether at IUP or elsewhere, should request that their scores be sent to: Dean, The Graduate School, IUP, Indiana, PA 15705.

Foreign Student Applicants

In addition to following the general procedures for admission to The Graduate School, foreign students must present evidence of fluency in English. Applicants whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL)*. The Graduate School will not process applications from such students until satisfactory TOEFL scores are filed with the Dean of The Graduate School.

TOEFL scores are only one of several criteria considered for the admission of foreign students to the Graduate School at IUP. However, as a broad indicator, applicants should be aware of the Council of Graduate Schools' finding that, among American universities, the TOEFL scores most widely expected for admission are 500 and above.

Foreign applicants must also present evidence to The Graduate School of having financial resources sufficient to meet the cost of living in Indiana, Pennsylvania; the cost of travel to and from the student's native country, and the cost of graduate education at IUP. Such evidence should be sent directly to: Dean, The Graduate School, IUP, Indiana, Pennsylvania 15705, U.S.A. The Graduate School gives notification to the University's Foreign Student Adviser of foreign student applications received; the Foreign Student Adviser mails to the prospective foreign student information on housing, arrival dates, and other general information about the University. Applicants who have questions about legal or other matters such as the issuance of certificates of eligibility (1-20) and the like should address those questions directly to: IUP Foreign Student Adviser, IUP, Indiana, Pennsylvania 15705.

Foreign Student Candidacy Test—All foreign students will be required to take the GRE if they have studied in an American college or university. If a foreign student has not studied in an American college or university, the test required for candidacy will be the TOEFL. Business students in MBA or MS programs must take the GMAT regardless of foreign status.

*Students desiring direct information about this examination should write to TOEFL, Educational Testing Service, Princeton, New Jersey 08540, U.S.A.

PROGRAMMING AND REGISTRATION

Advisement

After a student has been admitted to The Graduate School, he/she should consult the department chairperson or coordinator of graduate studies in his/her intended field of study about a program of courses. If the student is a special graduate student, consultation should be with the Dean of The Graduate School. Advisement before course registration is required of all students enrolling for graduate classes for the first time. In addition, many departments feel strongly that their students should be advised well before registration for each semester or summer term; these departments are identified in each semester's (or summer session's) schedule of course offerings. The student should carefully check such schedules about advisement responsibilities, as well as course offerings, before registration.

Pre-registration

Prior to each semester or summer session enrolled graduate students receive schedules and pre-registration materials with accompanying instructions from The Graduate School. Similar material is sent to prospective new students in response to their inquiries. The student should return all completed registration forms to the Graduate Office by the date published in the graduate schedule.

Final Registration

After the student has returned the registration materials to The Graduate School, he/she will receive from the Business Office a bill for tuition and fees. Bills must be paid before the student attends classes. Arrangements for housing and meals when necessary, parking, identification-card receipt can be made at the registration location for "walk-in" students. Mail-registered students should make such arrangements independently with offices involved.

"Walk-in" registration is usually held during the final hours of registration for students who have not pre-registered. Walk-in students may encounter lengthy delays in their registration processing and other inconveniences. It is unquestionably to the student's advantage to be processed with the majority pre-registration group.

APPLICANTS FOR SPECIALIST OR SUPERVISORY CERTIFICATION PROGRAMS

IUP offers specialist or supervisory certificate programs in Instructional Media Specialist (Communications Media Department), Elementary School Counselor, Secondary School Counselor, Supervisor of Guidance Services, Supervisor of Pupil Personnel Services (Counselor Education Department), School Psychology certification (Educational Psychology Department), Reading Specialist, Reading Supervisor (Elementary Education Department), and Supervisor in Special Education (Special Education and Clinical Services Department).

Applicants for these programs should follow the same procedures for

admission, programming, and registration as described in this catalog for special programs requirements. However, potential applicants should check with the department chair or graduate coordinator responsible for the specialized program in order to gather information before beginning the admissions process.

FINANCIAL AID

The Financial Aid Office, located at 308 Pratt Hall, offers financial information and counseling to all students attending IUP. The types of financial assistance offered by the Financial Aid Office include student employment, loans, and scholarships. In most cases the Pennsylvania State Grant Application is used to determine eligibility for these programs.

In order to be considered for financial aid administered through the University, a Pennsylvania State Grant Application must be submitted to Harrisburg, Pennsylvania. Students attending IUP on at least a half-time basis (5 credit hours or more) will be awarded assistance based on demonstrated financial need. To be eligible for continued funding, applicants must remain in satisfactory academic standing at the University and show continued academic progress.

Payment of financial aid awards is done on a semester basis. All financial aid, with the exception of the private scholarships, work-study, and guaranteed student loans are credited to the student's bill in advance.

The cost of attending IUP and the University's refund policy are listed in this catalog. Please refer to the index for further information.

Assistantships

IUP offers both half-time assistantships (20 hours per week of assistantship service) and quarter-time assistantships (10 hours per week of assistantship service) to full-time graduate students. Duties will vary somewhat from assistant to assistant and may include assistance with teaching, supervised teaching, research or assistance with research, and university service activities. Duties are under the supervision of a graduate faculty member. Assistantships are looked upon as an encouragement or reward for academic excellence rather than a means to relieve financial need.

Half-time assistantships carry a full tuition waiver for the two semesters of the assistantship and the following summer. With some exceptions, quarter-time assistantships carry one-half tuition waiver for the two semesters of the assistantship and a six semester hour waiver for the following summer.

Since stipends for assistantships may be raised from year to year, potential applicants should check with The Graduate School for current stipend levels.

The deadline for applying for a September assistantship is March 15 of the same calendar year. Applications and further information are available at The Graduate School.

Scholarships

Margaret Flegal Harte Scholarships

Two \$450 scholarships are awarded yearly to needy new full-time graduate students. All new Graduate School applicants except for those who

receive other IUP scholarships are considered for the Margaret Flegal Harte Scholarships based on academic records and financial need. No application forms for the scholarships are required; the Pennsylvania State Grant Application submitted to Harrisburg, Pennsylvania, serves as the need analysis document for need assessment.

Employment Programs

A. Federal College Work-Study Program (CWSP)

The College Work-Study Program provides an opportunity for graduate students to earn money to help finance educational expenses. Students may be employed on campus for up to 20 hours per week when classes are in session and 40 hours per week during vacation periods. Work-study jobs not only help to defray the cost of education but can add valuable practical experience accompanying the student's graduate education. Eligibility is based on financial need as determined by an analysis of the Pennsylvania State Grant Application submitted to Harrisburg, Pennsylvania. The form is available in the Financial Aid Office.

B. State University Employment Program (UE)

The State University Employment Program also provides an opportunity for students to work as an accompaniment to their studies program. Maximum UE hours are 20 hours per week when classes are in session and 40 hours per week during vacation periods. No application is necessary.

C. Special Funded Grant Employment opportunities are also available to graduate students from time to time. Interested students should check with the Graduate Office.

Loan Programs

A. Guaranteed Student Loan (GSL)

Applications for the GSL, known in Pennsylvania as the PHEAA Loan, are obtained from private lending institutions such as banks and credit unions and are administered in conjunction with the State and Federal Governments. There are no cancellation privileges. Up to \$5,000 per academic year may be borrowed with a total limit of \$15,000 for graduate study or \$25,000 for graduate and undergraduate years combined. For new borrowers, repayment at 8% simple interest per year starts after the six month grace period. Previous borrowers will continue at the same interest rate (7%, 8%, or 9%) and the same grace period (six or nine months). Minimum monthly repayment is \$50.00.

B. Auxiliary Loans to Assist Students (known in Pennsylvania as PLUS)

Applications for the PLUS loan are obtained from participating private lending institutions such as banks and credit unions and are administered in conjunction with the State and Federal Governments. There are no cancellation privileges. Up to \$3,000 per academic year may be borrowed by approved graduate students with a maximum of \$15,000 for graduate study.

Repayment at 12% interest per year starts 60 days after the check is issued. Some lenders will defer payment of principal until graduate study is completed.

C. Family Partnership Loan (FPL)

To assist students who are ineligible for GSL or who receive less GSL than had been requested, PHEAA has established the Family Partner-

ship Loan. \$10,000 maximum may be borrowed at approximately 10% annual interest. Principal repayments may be deferred until completion of graduate study. Interest must be paid quarterly.

To be considered for the Family Partnership Loan, students **must** submit a **GSL** application and receive a denial or less than requested. PHEAA will contact the student automatically with details of the FPL.

Veterans

IUP is approved to offer training under the various G.I. Bills. Students who are entitled to training under one of these bills should contact the Veterans' Counselor immediately after being accepted for admission to IUP in order to secure additional instructions. This procedure is necessary so veterans may be included on the monthly payrolls. The Office of the Veterans' Counselor is in 304 Pratt Hall.

INSURANCE

IUP provides an opportunity for full-time graduate students to purchase accident and illness insurance. Coverage normally begins on a date near the end of August and ends on the same date the following year. However, shorter coverages are available based on the date a graduate student enrolls at IUP. Since the range of items covered and benefit maximums change from time to time, no policy details can be listed here. For further details and/or policy purchases, please contact the Associate Treasurer, Administrative Annex, IUP, Indiana, PA 15705.

Foreign students enrolled at IUP must purchase the insurance described above unless they can demonstrate that they already have comparable coverage.

GENERAL GRADUATE SCHOOL PROCEDURES AND REGULATIONS

The graduate student is expected to assume full responsibility for knowing graduate program procedures and regulations. General Graduate School requirements are set forth in this catalog; a description of special departmental degree requirements is available at each department sponsoring the specific degree or certification program. Requests for exceptions to policy are given consideration when unique circumstances exist; questions concerning the proper routing of such requests should be addressed to the Graduate School Dean. In addition to knowing policy and procedure, all admitted graduate students should also be familiar with the document "Graduate Student Rights and Responsibilities," a copy of which can be obtained at the Graduate Office.

Program Changes

To insure their quality and relevance, graduate programs at IUP are subject to constant review and change by duly appointed and responsible University groups. Because of this, the University recognizes that provision must be made to prevent hardship to students already enrolled in programs if changes later occur in specific or general program requirements. Students

affected by changes in programs, policies and regulations are therefore given the option of following those requirements in effect when the student was first admitted to the program or those in effect at the time of expected graduation. The student cannot, of course, combine chosen elements of the two. Should a question of rule interpretation arise with respect to changes, the student, the student's adviser, or both should petition The Graduate School Dean for a decision about which requirements apply.

Graduate Student Rights and Responsibilities

Upon admission to The Graduate School, the student assumes responsibility for knowing program requirements and following established procedures in relation to academic advisement, course selection and registering, the payment of fees, the processing of withdrawals from class (if any), the meeting of residency requirements, applying for degree candidacy, and applying for and meeting all specific requirements for graduation. Conversely, he/she has the right to expect that all program requirements will be made clear, that all course requirements—including grading criteria and procedures—will be made known early in the course, and that course grades will represent the instructor's professional and objective evaluation of performance. He/she has the right to instruction which encourages the free and open discussion of ideas, and which respects reasonable student needs and aspirations. It is the student's responsibility to contribute to that classroom decorum and atmosphere which encourages maximum learning. Finally, the student understands that a departmental evaluation of academic progress and professional potential will be filed and that such an evaluation is available upon request.

The Graduate Student Assembly

Each IUP department offering a graduate program is required to establish a graduate studies committee and is urged, but not required to form an association for its graduate students. On a University-wide basis, the Graduate Student Assembly (GSA) is the graduate students' organization. GSA is composed of two elected representatives (and frequently an alternate) elected by the full-time and part-time graduate students of the department. GSA functions to serve all graduate students by having voting representation on the Graduate Council and in the University Senate; by having the right to review Council policies; by having the means to make recommendations about graduate student affairs to the Council and/or to the Graduate Dean; by working to improve the social, intellectual, and cultural life of graduate students; and by participating in the judicial procedure established for graduate students.

Academic Good Standing

IUP graduate students must maintain a minimum of 3.0 (B) cumulative graduate quality point average to be in good standing academically. Students falling below good standing are placed on probation for their succeeding active semester or summer; probationary continuance beyond one semester or summer is permitted only upon receipt of special authorization to this effect from the Graduate Dean. A student must be in good standing to be admitted to degree candidacy and to graduate.

ACADEMIC CREDITS AND STUDENT STATUS

Although many graduate students depend upon part-time or full-time employment to meet expenses, the time demands for such employment must not be permitted to curtail academic achievement. IUP Graduate School facilities are offered only to students in a position to benefit from their graduate experience.

Students may regularly schedule a full-time academic load in most graduate programs. Full-time graduate student status is defined as 9 to 15 graduate semester hours per semester, while part-time status is defined as eight or fewer semester hours per semester. Full-time graduate students should not hold full-time outside employment. Graduate assistants may not register for more than 12 total hours in any semester.

WORKSHOPS AND OTHER SPECIAL CREDITS

The following policy governing the use of workshop and other special-offering credits toward graduate degrees was passed by the University Senate on May 8, 1979:

The individual master's degree candidate may submit for credit for his degree no more than six (6) semester hours of workshop and other special-credit offerings approved by the department offering the degree. Doctoral candidates may submit a further six (6) semester hours of such work beyond the master's or its equivalent if approved by the degree-granting department. Should the workshop(s) or special credit offering(s) later become a catalog-listed course which is part of the degree program, while the student is still working toward his/her degree, the student may request of the department a retroactive reclassification of credits so earned and upon approval may again use workshop or special offering credits, up to the above maximum, toward a degree.



RESIDENCY

Master's degree candidates may satisfy the residency requirements by taking all credits applicable to the IUP degree (except possibly six transfer credits—see "Credit Transfers." Doctoral candidates have the following options: completion of a minimum of nine graduate credits at IUP in each of at least two consecutive semesters; completion of a minimum of nine graduate credits at IUP for at least one semester immediately preceding or following a summer of nine-hour study; completion at IUP of at least nine graduate credits in each of two consecutive summers plus six graduate credits during the intervening academic year; or completion of 12 graduate credits at IUP in each of two consecutive summers (this latter is recommended only in very special instances).

DEGREE CANDIDACY

Part-time graduate students must apply for degree candidacy through their Dean's Office immediately following completion of six graduate credit hours taken at IUP. Full-time students must do the same at the mid-term of the semester or summer term during which they are taking their 12th IUP graduate hour. The appropriate form is available at the College Dean's Office. Notification of candidacy award or denial, as recommended by the program's sponsoring department, will be received from the Dean. Receipt of degree candidacy is a most important requirement in the student's progress toward an IUP graduate degree.

Admission to Candidacy

To qualify for admission to candidacy, the student must complete the following steps:

1. Submit an official application for admission to candidacy to the College Dean (form may be obtained at the student's College Dean's Office).
2. Complete with satisfactory grades (see description of Academic Good Standing) at least six semester hours (part-time students) or be in the process of completing 12 semester hours (full-time students—see first paragraph under Degree Candidacy) of graduate work at IUP.
3. Have on file in the Graduate Office scores from the Graduate Record Examination, or for MBA and MS in Business students, The Graduate Management Admission Test.
4. Have satisfied the research course requirement (GR 615 Elements of Research, or equivalent).
5. Have on file in the College Dean's Office a tentative program of studies for completion of the desired degree program.

Degree candidacy is awarded by the dean's office only upon recommendation of the student's academic department. The student will be notified in writing of candidacy decisions.

Individual departments may have requirements exceeding the minimum prescribed by The Graduate School. Students should inquire for such written requirements at the degree-sponsoring department.

GRADING SYSTEM

The following grades are used in reporting the standing of students at the end of each semester or summer term:

A—Excellent	I—Incomplete
B—Good	R—Research in Progress
C—Fair	W—Withdrawal
F—Failure	

No “D” grade is recognized in IUP graduate work.

Quality points are assigned as follows: A—4; B—3; C—2. No quality points are carried by the notations of F, I, R, and W.

The notation “I” is used to record work which, as far as it has progressed, is of passing grade but is incomplete because of accident, illness, pregnancy, or extreme personal disturbance. The “R” notation pertains only to thesis and dissertation research credits when such research is in progress as a semester or summer terms ends, or in certain practicum-type courses approved for this notation by the Graduate Dean. All “R’s” are replaced by the research grade eventually assigned when the research is completed. The “W” notation applies to certain withdrawals from courses. Withdrawals from the University and discrete course withdrawals are discussed in detail in other sections of this catalog. Note that an “F” is entered in the student’s permanent academic record if a withdrawal of either type has not been processed in accordance with established procedures.

Course Auditing

Auditing is not permitted in a graduate course unless the student has been admitted to The Graduate School, has received permission to audit from the course’s instructor, and has been approved for course enrollment by the Dean of The Graduate School. Auditors must pay normal tuition and related fees. An auditor will, with permission from the instructor, participate in class discussion, do practicum work, take examinations, and share generally in the privileges of a class member. If the student completes all course requirements—but only if so—an “Audit” notation is posted to the student’s academic record. No student who is required to carry a certain number of credits may count among those credits the credit of an audited course.

Class Cancellation

It is the policy of The Graduate School not to cancel regularly scheduled classes because of weather conditions, nor does it make announcements via radio, newspaper, or through its switchboard that classes are being suspended because of such conditions. In cases of emergencies disrupting transportation facilities or otherwise creating hazardous travel conditions, students should make those decisions as to attendance which appear appropriate to them in their particular circumstances.

Graduate Course Numbering

All dual-level courses, open to enrollment by both graduate and qualified undergraduate students, carry a 500-599 course number; all courses open only to graduate students carry 600-series and above numbers.

Dual Level Courses

The number of credits attained in dual-level courses (500-599) which shall be applicable to a degree program for any student shall be a maximum of 50% of the credits required for that degree. Some programs may call for less than 50%. Students should check this requirement with their advisors.

Graduate students who enroll in dual level courses should be aware that dual level courses commonly impose greater obligations on graduate students than on undergraduate students taking the same course.

COURSE ABBREVIATION KEY

The following departmental abbreviations are used to identify courses referred to in the Catalog:

Adult Education	AC	Foundations of Education	FE
Accounting	AG	Geography & Regional Planning	GE
Administrative Services	AD	Geoscience	GS
Art History	AH	Graduate	GR
Applied Music	AM	Health & Physical Ed	HP
Anthropology	AN	History	HI
Art	AR	Home Economics Ed	HE
Art Education	AT	Industrial & Labor Relations	LR
Business Education	BE	Management	MG
Biology	BI	Marketing	MK
Chemistry	CH	Mathematics	MA
Communications Media	CM	Music	MU
Computer Science	CO	Nursing	NU
Consumer Services	CS	Philosophy	PH
Counselor Education	CE	Physics	PY
Criminology	CR	Political Science	
Distributive Education	DE	(Public Affairs)	PS
Economics	EC	Psychology	PC
Early Childhood Education	EE	Religious Studies	RS
Education	ED	Safety Sciences	SA
Education Administration	EA	Science	SC
Educational Psychology	EP	Social Science	SS
Elementary Education	EL	Sociology	SO
Elementary Mathematics	EM	Special Education	
Elementary Science	ES	Ed of Except Children	EX
English	EN	Speech & Hearing	SH
Fine Arts	FA	Student Personnel	ST
Finance/MIS	FS	Theater	TH
Food and Nutrition	FN		
Foreign Language	FL		
Critical Language	CL		
French	FR		
German	GM		
Greek	GK		
Latin	LA		
Spanish	SP		

Credit Transfers

Credit for graduate courses taken at another institution may under certain circumstances be incorporated as part of the graduate student's program at IUP. These courses must have been completed on the main campus of an accredited institution, or acceptable in its degree programs by that main campus. The grade earned must be a "B" or its equivalent or better. The time limitation rule for IUP degrees (cited later in this catalog) pertains without modification to transfer credits.

A maximum of six credits of transfer work may be accepted. Transfer credits are not necessarily posted to the student's IUP graduate record until the student has been admitted to degree candidacy. Acceptance of transfer credit must be approved by the candidate's department and the Dean. Students wishing to transfer back to IUP credits taken at another institution while enrolled in an IUP graduate program must receive advance written authorization for credit acceptance from the College Dean.

Graduate Course Repeat Policy

Under University policy no graduate credit is recognized for courses completed with grades of "F". Graduate grading policy does not permit an award of "D". A student receiving a "C" or "F" grade may request through his/her adviser or coordinator of graduate studies approval to repeat the course to a maximum of two repeats. Each such repeat must receive final approval from the dean of the student's College.

Semester hours for repeated courses shall be counted only once for all attempts made and, should there be a difference in hours because of a course hours change, the hours and quality points earned when last taken shall be those used for quality point average computation.

Credits earned in only one repeated course may be applied to an IUP graduate degree.

Course Overlaps in Degree Programs

Within set limits, a student may use the same course to count in two different master's degree programs, if the course is acceptable in both programs. However, the number of overlap credits counted toward a second master's degree will be limited to 20% of the credits in the second master's degree program. Exceptions to this limit may be made by the Graduate Dean in consultation with the appropriate Department Chair and College Dean.

Independent Study Maximum

Only six credits of Independent Study work may apply toward a graduate degree unless written authorization for hours in excess of six is obtained from the student's adviser or coordinator of graduate studies and the dean, in that order.

Graduate Internship Policy

To qualify for a graduate internship appointment the graduate student must have a minimum of 12 IUP graduate credits earned and a minimum 3.0 GPA; must have been in full-time enrollment (nine graduate credits or

more) during the semester or summer sessions (the latter taken as a whole) immediately preceding the academic period for which internship is requested;* and must meet departmental internship criteria. No more than six internship credits may apply to a graduate degree unless written approval of the student's departmental chairperson or graduate studies coordinator and the dean (in that order) is obtained. Continuation in an internship experience by a given graduate student is contingent upon the student's maintenance of satisfactory performance in all aspects of his/her degree program. Programmatic exceptions to the foregoing policy can be made only with the approval of the Graduate Council.

*For graduate students active during summers only, or during fall-spring semesters only, "immediately preceding the academic period" etc. refers to the student's last preceding active semester or summer session.

Final Credits Policy

All degree candidates must complete their program's final six credits of graduate work in courses offered by IUP. Under certain circumstances appropriate substitutions may be authorized. Students wishing such authorization must petition the Dean after obtaining the approval of their adviser and department chairperson or graduate studies coordinator.

Discrete Course Withdrawal

During the fall and spring semesters, graduate students may request authorization to withdraw from a graduate course without prejudice and with the grade of "W" by petitioning the Graduate Dean in writing within the first two-thirds of the semester as determined by the published University calendar. The request must carry the endorsement of both the course instructor and the student's department chairperson or graduate studies coordinator, in that order. Graduate students wishing to withdraw from an undergraduate course within the prescribed period must do so by processing the standard undergraduate Discrete Course Withdrawal form.

For summer term classes and labs, the following is substituted for the above in the preceding paragraph; for the Pre and Post Sessions, within the first six class days; for Main Session, within the first twelve class days.

Following the close of the established six weeks (or 6th or 12th day) withdrawal period, a graduate student may withdraw from a course, either graduate or undergraduate, without grade penalty only with the written approval of his/her department chairperson or graduate studies coordinator and the Dean (in that order) for such reasons as accident, severe illness, or extreme personal disturbance. A student dropping a course under any other circumstances will automatically receive an "F" at the end of the semester or summer term.

Withdrawals from the University

Graduate students withdrawing from the University for any reason must process such withdrawals in writing through the Office of the Graduate Dean. The official withdrawal date to be recognized will be established by the Dean.

Please refer to the early pages of this catalog for detailed description of the University's Refund Policy and related matters.

Official notification of course withdrawal will be sent by the Graduate

Dean to the student's course instructor(s) and chairperson/graduate studies coordinator.

No person shall be considered withdrawn from the University unless the withdrawal process described herein has been employed.

Graduate Course Scheduling by Certain Undergraduates

IUP undergraduate students with an academic grade point average of at least 2.6 who are within 32 semester hours of graduation are permitted after appropriate approvals, to take up to six semester hours of graduate work whether or not they have applied for acceptance into an IUP graduate program. Graduate hours so earned have no necessary bearing upon the meeting of undergraduate degree requirements, and no assurance is given or implied as to the hours' later applicability to a graduate degree should the students be admitted to an IUP graduate program.

Time Limitations

Program credits earned at IUP or accepted by transfer are applicable to IUP master's degrees over a period not to exceed five years from the date of their earning unless the period is extended through student petition approved by the program's chairperson or graduate studies coordinator and the Graduate Dean. Doctoral candidates must complete degree requirements no later than seven years after beginning IUP doctoral program course work unless an extension similarly is authorized.

Graduation

Early in their final semester or summer session, students must file an application for graduation in their College Dean's Office on a form furnished by that office. Graduation applications must be filed by the deadlines shown on the Graduate Calendar.

When all requirements for the degree have been completed and this fact is attested to by the student's department, the student's College Dean, and The Graduate School, the student's academic record will be so posted and the degree will be awarded at the following established diploma-award date. An official diploma is presented to the student at that time.

DOCTORAL DEGREE PROGRAMS

The Graduate School at IUP offers work leading to the doctorate through the following departments: Counselor Education, Educational Psychology, Elementary Education, English and Psychology.

Applicants should keep in mind that the doctorate is conferred for distinguished achievement in a particular field of scholarship and for demonstrated ability to perform independent research in an area of that field. No specific number of course credits entitles a student to the degree.

Those interested in any of the doctoral programs should read the description provided by sponsoring departments later in this catalog. Deadlines for submitting applications and supporting documents vary from program to program, as do degree requirements. Therefore, it is important

for students to check with the sponsoring department at the very start of the application process.

The following doctorates are offered:

- Doctor of Education in Counselor Education
- Doctor of Education in Elementary Education
- Doctor of Education in School Psychology
- Doctor of Philosophy in English and American Literature
- Doctor of Philosophy in Rhetoric and Linguistics
- Doctor of Psychology in Clinical Psychology

The doctoral programs in Counselor Education and School Psychology maintain cooperative arrangements with other universities in the State System of Higher Education (SSHE), whereby some part of the requirements may be fulfilled at these schools. Counselor Education has a cooperative agreement with California University of Pennsylvania and the School Psychology program with California University of Pennsylvania, Edinboro University of Pennsylvania, and Millersville University of Pennsylvania. For details, check the appropriate program descriptions in this catalog and consult with the sponsoring department.

Requirements for the Doctoral Degree

Students seeking a doctoral degree must satisfy the minimum Graduate School requirements described below. Sponsoring departments may have additional requirements; students must be equally familiar with departmental requirements since these are equally binding.

Under certain circumstances Graduate School requirements for the Doctoral degree may be satisfied by means of substitution. Requests for the acceptance of substitutions should be made in the form of a petition to the Graduate Dean, the petition first having the approval of the student's adviser and department chairperson or graduate studies coordinator.

Credit requirement—A minimum of 60 graduate semester credits, exclusive of dissertation credits, must be earned beyond the bachelor's degree for any of the doctorates offered at IUP.

Transfer credit—Transfer credit is limited to the credit equivalent of a recognized master's degree, except in those special cases recommended by the student's department chairperson or graduate studies coordinator and approved by the Graduate Dean and up to 12 graduate credits in the use of program specific interinstitutional agreements approved by the Graduate Dean.

Admission to Candidacy—Each student admitted to a doctoral program must apply for doctoral degree candidacy after completing at IUP no less than nine nor more than 15 graduate credits beyond the master's degree. The student must have a minimum quality point average of 3.0. The student's minimum GPA may be set higher than the foregoing Graduate School requirement by the program's sponsoring department, but in no case may it be lower.

Candidacy Examination—The candidacy examination, which may be written, oral, or both, as determined by the program's sponsoring department, and which may serve also as the final examination for the master's degree if a department so prescribes, is administered by the department in the student's field of specialization. The examination may not be taken until the student has completed at least one year of study beyond the bachelor's degree. Examination scores must satisfy the student's dissertation committee.

The Dissertation Committee—The candidate's dissertation committee supervises the student's degree program from the point at which he/she is admitted to doctoral degree candidacy through defense of the dissertation. The committee approves the student's plan of study; arranges for the candidacy examination; arranges for the comprehensive examination; and oversees the candidate's general supervision related to research, the dissertation, and the general meeting of degree requirements.

The Comprehensive Examination—This examination is given, usually upon the candidate's completion of course work, to determine the student's stage of progress in the degree field and fields related to it, and the student's likelihood of success in his/her research—dissertation phase. The examination may be written, oral, or both. It is not necessarily limited to areas in which the candidate has taken course work.

Foreign Language/Research Tool Options—Foreign Language and/or research tool requirements for doctoral degrees vary from program to program. In most cases, programs offer options for meeting these requirements. Students should consult with the department sponsoring the degree for specific information and guidance on meeting these requirements.

Research Proposal—After the candidate has passed the comprehensive examination and has done extensive preliminary proposal research, he/she must present and defend a research proposal before the dissertation committee. A copy of the proposal must be placed in the hands of all committee members at least two weeks in advance of the scheduled meeting. The proposal must be found satisfactory by all members of the committee before the candidate may proceed with the dissertation.

The Dissertation—A dissertation is required of all doctoral candidates. The paper must demonstrate the candidate's mastery of his/her research and reflect the results of an original investigation in the principal field of study. The goal should be to make a definite original contribution to knowledge in the field. The notation "R," to indicate research in progress, is made in the candidate's academic record.

Dissertation Review Meeting—Upon acceptance of the dissertation by the candidate's adviser, the candidate must follow procedures acceptable to his/her department and College Dean in providing copies for review by the dissertation committee, College Dean and graduate coordinator. The candidate shall then request a formal meeting of the dissertation committee, at a time convenient to all members, to secure dissertation approval. The dissertation must be approved in writing by each member of the committee.

Publication of the Dissertation—Following dissertation approval by the committee, three copies of the dissertation and two copies of an abstract must be submitted to the College Dean. The program's sponsoring department may also require a copy for its archives.

The dissertation must be microfilmed according to the plan provided by University Microfilm, Ann Arbor, Michigan.

Re-examination—A student who fails the candidacy examination, or any part of the comprehensive examination, or any of the examinations in foreign languages and/or computer language, may request re-examination not earlier than one semester following the time of failure, nor later than one year after that date. No student is permitted a third examination without a recommendation to that effect from the degree program's sponsoring department and the approval of the Graduate Council.

Application for Graduation—Formal application for graduation must be filed with the dean of the student's college no later than two months prior to the University's published degree-granting date at which the candidate expects to receive the doctoral degree.

MASTER'S DEGREE PROGRAMS

The Graduate School offers Master of Arts and Master of Science degrees in most academic fields plus the professional degrees Master of Business Administration and Master of Education. See below for specific degree fields. All students working toward a master's degree must satisfy The Graduate School policies set forth in this catalog. Most departments have additional special program requirements; students must be equally familiar with departmental requirements.

Under certain circumstances a specific Graduate School requirement for the master's degree may be satisfied by means of substitution. In no case are requirements waived. Requests for substitutions must be made by petition of the College Dean after approval by the student's adviser and department chairperson or graduate studies coordinator.

Master of Arts degrees are offered in the following:

Adult/Community Education	Industrial and Labor Relations
Art	Music
Art Therapy	Physics
Chemistry	Psychology
Counseling Services	Public Affairs
Criminology	Sociology
English	Spanish Language and Literature
Geography	Student Personnel Services
History	

Master of Science degrees are offered in:

Biology	Health & Physical Education (Sport Sciences)
Business	Mathematics
Chemistry	Nursing
Exceptionality (Adult)	Physics
Food and Nutrition	Safety Sciences
Geography	Speech-Language Pathology

A Master of Business Administration degree (MBA) is offered.

Master of Education degrees are offered in the following:

Art	English
Biology	Geography
Business	German
Chemistry	Home Economics
Communications Media	Mathematics
Education of Exceptional Children	Music
Educational Psychology	Physics
Elementary Education	Reading
Elementary Mathematics	Science
Elementary Science	Social Science
Elementary or Secondary School Counseling	Spanish
	Speech-Language Pathology

The Thesis/No Thesis Option, Master's Programs

Several IUP master's degree programs offer the graduate student a thesis/no-thesis option.

When the no-thesis option is chosen, additional approved course work—usually six or more credit hours—is frequently required.

The typical committee thesis arrangement (3-6 s.h.) has the student working with a committee of four faculty members including the student's adviser and two faculty members, one of whom may or may not be a member of the program's department. The committee may include an off-campus person with special expertise as part of the four if requested by the department and approved by the Graduate Dean.

DEPARTMENT	DEGREE	THESIS	CREDITS	COMMENTS	
Adult/Community Ed.	MA	Optional	36		AC645 may be substituted for the thesis.
Art	MA	Required	30		
	MEd	Required	30		
Art Therapy	MA	Required	39		
Biology	MS	Required	32	—	Thesis
	MEd	Optional	30	—	Thesis
			33	—	No Thesis
Business	MBA	No Thesis			
	MEd	Optional	30		
	MS	Optional	30		
Chemistry	MA	Optional	30	—	Thesis
	MS	Required	30	—	Thesis
	MEd	Optional	30	—	Thesis
Communications Media	MEd	Optional	30	—	Thesis
			36	—	No Thesis
Counselor Ed	MEd	Optional	33		
	MA	Optional	36	—	Thesis
			39	—	No Thesis
Criminology	MA	Optional	36	—	Thesis

DEPARTMENT	DEGREE	THESIS	CREDITS		COMMENTS
Educational Psychology	MEd	Optional	33	—	Thesis
			36	—	No Thesis
Elementary Education	MEd	Optional	30	—	Thesis
			36	—	No Thesis
Elementary Mathematics	MEd	Optional	30	—	Thesis
			30	—	No Thesis
Elementary Science	MEd	Optional	30	—	Thesis
			33	—	No Thesis
Emotionally Disturbed	MEd	Optional	33	—	Thesis
			36	—	No Thesis
English	MA	Optional	30	—	Thesis
			30	—	No Thesis
	MEd	Optional	30	—	Thesis
			30	—	No Thesis
Exceptionality	MS	Optional	33	—	Thesis
			36	—	No Thesis
Food and Nutrition	MS	Optional	30	—	Thesis
			33	—	No Thesis
Geography	MEd	Optional	30	—	Thesis
			36	—	No Thesis
	MA	Optional	30	—	Thesis
			36	—	No Thesis
	MS	Optional	30	—	Thesis
			36	—	No Thesis
German	MEd	Optional	30		
	MA	Optional	30		
Gifted and Talented	MEd	Optional	33	—	Thesis
			36	—	No Thesis
Health & Physical Ed.	MS	Optional	30	—	Thesis
			36	—	No Thesis
History	MA	Optional	30	—	Thesis
			36	—	No Thesis
Home Economics	MEd	Optional	30	—	Thesis
			33	—	No Thesis
Industrial & Labor Relations	MA	Optional	42	—	Thesis (3-6 crs)
Learning Disabilities	MEd	Optional	33	—	Thesis
			36	—	No Thesis
Mathematics	MEd	Optional	30	—	Thesis
			30	—	No Thesis
	MS	Optional	30	—	Thesis
			30	—	No Thesis
Mental Retardation	MEd	Optional	33	—	Thesis
			36	—	No Thesis
Music					
In Music Performance	MA	Recital	31		
In Theory or Musical Composition	MA	Optional	31	—	Musical Composition

DEPARTMENT	DEGREE	THESIS	CREDITS		COMMENTS
In Music History	MA	Required	31		
In Music Education	MA	Optional	30	—	Course Work or Thesis or Recital
	MEd	Optional	30	—	Course Work or Thesis or Recital
Nursing	MS	Optional	38	—	Thesis
			44	—	No Thesis
Physics	MS	Required	30		
	MEd	Optional	30	—	Thesis
			33	—	No Thesis
	MA	Optional	30	—	Thesis
			33	—	No Thesis
Political Science	MA				
International Studies		Optional	30	—	Internship required if Thesis Option not chosen.
Public Affairs		No Thesis	36	—	Internship required
Professional Growth	MEd	Required	30	—	4 credit thesis required
	MS	Required	30	—	4 credit thesis required
	MA	Required	30	—	4 credit thesis required
Psychology	MA				
Community		Required	45		
General Experimental		Required	33		
Reading	MEd	Optional	32	—	Thesis
			36	—	No Thesis
Safety Sciences	MS	Optional	36	—	3-6 credits of thesis option is included.
Social Science	MEd	Optional	30	—	Thesis
			36	—	No Thesis
Sociology	MA	Optional	30	—	Thesis
			36	—	No Thesis
Spanish	MEd	Optional	30	—	Thesis
			33	—	No Thesis
	MA	Optional	30	—	Thesis
			33	—	No Thesis
Speech-Language Pathology	MEd	Optional	36	—	Thesis
			36	—	No Thesis
	MS	Optional	36	—	No Thesis
			36	—	No Thesis
Student Personnel Services	MA	Optional	33	—	Thesis
			33	—	No Thesis

MASTER OF EDUCATION CURRICULUM REQUIREMENTS

All Master of Education degrees at IUP are patterned as indicated below. The goal is to assure the student strength in humanistic and behavioral areas as well as professional development in selected subject specialty areas. Specific course descriptions are presented by department in the catalog section which follows:

I. Professional Development Area (nine s.h.)

A. Humanistic Studies (three s.h.)

One of the following courses:

- FE 611 Historical Foundations of Education
- FE 612 Philosophical Foundations of Education
- FE 613 Social Foundations of Education
- FE 514 Comparative Foundations of Education

B. Behavioral Studies (three s.h.)

One of the following courses:

- EP 604 Advanced Educational Psychology
- EP 573 Psychology of Adolescent Education
- EP 576 Behavioral Problems
- EP 578 Learning
- EP 580 Pupil Adjustment
- CE 629 Group Procedures (Elementary)
- CE 639 Group Procedures
- EX 631 Psychology of the Exceptional Child

C. Research (three s.h.)

- GR 615 Elements of Research

II. Specialization Core (six s.h.)

- FE 515 Curriculum Development
- CM 600 Seminar in Learning Resources
- OR

Department Methods or Curriculum Course(s)

III. Subject Area and/or Electives (11-15 s.h. maximum)

SCHOOL CERTIFICATION

Students admitted to The Graduate School who wish to work toward certification in a specific field(s) should check the descriptions of certification programs found in this catalog for requirements related to their program(s) of interest. If a given certification program requires completion of a master's degree, the master's degree procedures and regulations set forth in this catalog apply. The Graduate School does not, however, certify students; certification is processed by the Dean of the College of Education.

Principal Certification

IUP offers a competency-based school administrative certification program in elementary and secondary education. Those who wish to pursue this program must first be granted admission to the Graduate School. Before

applying, however, potential applicants should consult with the director of the principal's certification program (Dean's Office, College of Education, Stouffer Hall).

Graduate Study Beyond the Master's Degree

It is not unusual to find graduate students enrolling in more courses than they need to meet the requirements of a master's degree. Such action can be beneficial beyond the personal satisfactions which accrue, because the added studies may be well received by employers whether in business, government, or the school system in such matters as certification. However, students should understand that most graduate schools have residency requirements at the doctoral as well as master's level and frequently will accept no more than 30 graduate semester hours earned elsewhere as applicable to a doctorate.

Degree Eligibility of IUP Teaching Staff

Members of the teaching faculty at IUP with the rank of Assistant Professor or above (or equivalent), may not receive a graduate degree from this institution. This rule applies also to any faculty members employed at IUP full-time at the Instructor rank unless such an individual is already an approved candidate for a degree in the Graduate School of IUP at the time he/she is given full-time employment as an Instructor. Faculty members may, however, register for work in The Graduate School and apply the credit toward graduate degrees to be conferred by other institutions.



GENERAL SERVICE COURSES

The following Graduate School courses are taught by selected departmental faculty and are open to all qualified graduate students independent of degree or certification program. The student should check program applicability with his/her adviser, department chairperson, or graduate studies coordinator.

RESEARCH

GR 615 ELEMENTS OF RESEARCH 3 s.h.

Selection of a research problem, data collection, types of research, research reports, and use of the library and computer in connection with research problems are studied. Elements of statistics are introduced. This course provides background for preparation of the thesis and enables the student to become an intelligent consumer of products of academic research. Required of all students working toward the MEd degree.

*XX 850 THESIS 1-6 s.h.

For students writing the thesis. GR 850 should be scheduled for the semester in which the student plans to complete his/her work.

*XX 851 RECITAL 2-4 s.h.

Required for students enrolled in the program Master of Arts in Music-Performance. Graduate students in music education have the option to prepare and perform a formal recital in their major performing area under the guidance of their private teacher. Approval is granted from the area faculty of the student's performance major. MU 851 should be scheduled for the semester in which the student plans to give the recital.

*XX 950 DISSERTATION 1-12 s.h. — Hours to be arranged

Students preparing a doctoral dissertation for credit must register for this course. The number of credits assigned and the extent of time for which research activity is scheduled depend upon the nature and scope of the individual student's research problem and his/her general doctoral program.

*Each Academic department utilizes its own two-letter prefix.

NOTE: Credits for both thesis and dissertation if not completed during the semester scheduled are recorded as RESEARCH IN PROGRESS. They remain so until the paper is approved. THEY DO NOT AUTOMATICALLY REVERT TO THE GRADE OF "F" in a specific length of time. Also, thesis and dissertation can be programmed above the regular load.

STATISTICS

GR 516 STATISTICAL METHODS I 3 s.h.

Measurement and statistical techniques as used in administration and educational research. Basic descriptive statistics, including measures of central tendency, variability and correlation are developed. Reliability and validity of test scores with emphasis on use of statistical techniques studied and their interpretation.

GR 517 STATISTICAL METHODS II 3 s.h.

Using computer programs, a wide array of statistical procedures for research workers are explored. Basic concepts of statistical inference and prediction are reviewed, including regression analysis and prediction, hypothesis testing, analysis of variance and covariance, and partial and multiple correlation. Emphasis on use of computer and interpretation of computer print-outs along with understanding techniques employed. No computer knowledge is necessary. Prerequisite: GR 516 or equivalent.

OTHER COURSES

GR 681 SPECIAL TOPICS 1-3 s.h.

Group study of course material not offered in other graduate courses.

GR 699 INDEPENDENT STUDY 1-3 s.h.

Individualized in-depth study of an approved topic directed by a participating faculty member and approved administratively.

NOTE: Neither GR 681 nor GR 699 may be scheduled without prior written approval of the Graduate Dean.

SS 599 CONTEMPORARY EUROPE 3 s.h.

A study/tour program in Europe, commonly of three weeks duration each summer. Itinerary differs, but normally includes London, Paris, and Rome, Florence, Austria, and Switzerland, among others. Program atmosphere is informal and always fun and tiring (lots of walking). Informal lectures on site, guided tours. Academic work includes reading before departure and keeping a daily log.

ED 595 INTERNATIONAL STUDYTOUR IN EDUCATION 3 s.h.

Provides an analysis of educational programs and methodology in selected countries. Introduces students to series of diverse educational experiences. Special attention to teaching techniques, innovative curricula and school organizational patterns. Teaching takes place on site in selected countries.

SUPERVISED LABORATORY EXPERIENCE (TEACHING)

The following course, designed for cooperating teachers and others working with student teachers, is open to persons having a teaching certificate and teaching experience.

ED 540 SUPERVISION OF STUDENT TEACHING

Designed for cooperating teachers and others working with student teachers, this course provides opportunity for the development of pertinent materials and for continuous evaluation of various aspects of the student teaching program. Stress is also given to evaluate procedures used in working with prospective teachers. Basic principles underlying an effective student teaching program are examined from a theoretical and applied viewpoint. Prerequisite: Teaching certificate and teaching experience.





GRADUATE PROGRAMS AND COURSES

ANTHROPOLOGY

Anthropology is the study of human biological and cultural evolution. The discipline is organized into four sub-fields: sociocultural anthropology, physical anthropology, linguistics and archaeology. The breadth of anthropology gives the discipline wide applicability to a variety of careers and lifetime undertakings.

Although there is presently no graduate degree program in anthropology, courses in anthropology are a component of the MEd degree in Social Science and may be used as electives for MA degrees in other programs.

COURSE DESCRIPTIONS

AN 514 ETHNOLOGY OF NORTH AMERICAN INDIANS 3 s.h.

Review of culture history and culture area characteristics of Indians of North America. Representative groups at different levels of economic, social and political complexity chosen for more detailed study related to historical, functional, ecological and psychological concepts. Current living conditions of Native Americans ranging from lifestyles on the reservation to urban settings examined in view of recent theories of social and cultural change.

AN 520 FIELD SCHOOL IN ARCHAEOLOGY 6 s.h.

Current strategies and techniques in archaeological excavation research applied to prehistorical and/or historic sites in Indiana and adjacent areas. Relationships of archaeological and social science paradigms of archaeological data, national and state conservation policies, and archaeological study of culture change examined in excavation context.

AN 522 CULTURE AND PERSONALITY 3 s.h.

Studies personality traits unique to prescribed cultural or institutional settings. Subject matter includes socialization, emotional expression, kinesics, deviant roles, cultural aspects of mental disturbance, and value orientation. Some attention given to research methods employed in the discipline.

AN 571 CULTURAL AREA STUDIES 3 s.h.

Analysis of prehistoric, and contemporary aspects of ethnological studies in a culture area. Examines social organization, linguistic ties, cultural ecology, folklore, mythology, artistic expression and world view in a particular culture area. This course may be repeated according to selection of culture areas by instructors responsible for the course. The following culture areas are initially available: AN 571A CULTURAL AREA STUDIES: JAPAN; AN 571C CULTURAL AREAS STUDIES: THE CARIBBEAN.

AN 691 STUDIES IN ANTHROPOLOGY 3 s.h.

Surveys anthropological approach to human biological and cultural heritage with special reference to physical variability of human populations, past and present. Stresses relationship between culture and processes of biological evolution.

AN 692 COMPARATIVE CULTURES 3 s.h.

Comparative study of selected examples of world cultures ranging from hunting and gathering groups to modern industrial systems viewed as adaptations to their geographical, cultural and social environments. Emphasis on the universal features of culture.

AN 693 THE SCIENCE OF CULTURE 3 s.h.

Examination to major theories of cultural anthropology employed to account for variety and structure of human cultures. Worldwide data utilized; interplay between data and theory emphasized.

AN 694 ANTHROPOLOGY SEMINAR 3 s.h.

Considers conceptual problems and definitions in anthropology. Formulations of a variety of research problems central in anthropology emphasized.

AN 695 PREHISTORY 3 s.h.

Comparative study of specific cultural trajectories and cultural processes leading toward the emergence of urban society, political differentiation, the state, social stratification, craft specialization and militarization. Various culture change models examined using archaeological excavation data from China, India, Egypt, Mesopotamia, Africa, and Middle and South America.

ART AND ART EDUCATION

The following curricula make it possible for a mature student capable of self-direction to select a program suited to individual needs with the help of an adviser. In effect, the student and adviser can tailor-make a program of study.

Procedure for Admission (departmental approval)

1. The student must file a "letter of intent" stating the applicant's area(s) of specialization and reasons for these choices. The area of specialization is subject to review including one revision in consultation with the student's advisory committee. This review will take place between six and 12 semester hours. It is the student's responsibility to arrange for the review.
2. For admission to the MEd program, a student must have completed an undergraduate degree program in Art Education. To be admitted to the MEd and Certification or the MA in studio art, the candidate must possess a BS in Art Education, BFA or BA with a studio major or equivalent.

Research and Independent Study

Independent Study: A student may select a specific problem for one to three semester hours and pursue it in off-campus study with the help of an adviser. The student will present a proposal for approval to the adviser of his/her choice and the director of graduate studies. The study will be

reviewed by the advisory committee and juried at the end by the same committee.

Thesis: Under both thesis and independent study, the final product may be a one-artist show of the minor and major area. The show will be juried by the thesis committee, which will be composed of the advisory committee. The show will be accompanied by a written statement, sketch books, catalogue, notes or other methods of reporting deemed appropriate by the committee. All shows will leave some permanent evidence of their existence such as slides, photographs or catalogues.

MASTER OF EDUCATION IN ART

See page for additional information on the MEd degree.

I. Professional Development Area (nine s.h.)

A. Humanistic Studies (three s.h.)—One of the following:
FE 611, FE 612, FE 613, or FE 514.

B. Behavioral Studies (three s.h.)—One of the following:
EP 604, EP 573, EP 576, EP 578, EP 580, CE 629, or CE 639, or
EX 631.

C. Research (three s.h.)
GR 615, Elements of Research

II. Specialization Core (six s.h.)—One of the following courses:
FE 515, CM 600, AT 610, AT 611, AT 614, *AT 613.

III. Subject Area and/or Elective

AR Studio courses are listed in catalog (nine s.h.)
 Art Elective (three s.h.)
AR 850 Thesis (three s.h.)

For description of FE courses see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX courses, SPECIAL EDUCATION; for CM course, COMMUNICATION MEDIA.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

MASTER OF ARTS IN ART

Studio Major (AR 640 through AR 668)	no less than	12
Studio Minor (AR 640 through AR 668)	no less than	6
Art Seminar (AR 615)		3
Thesis (AR 850)		3
Electives		6
TOTAL		30

MASTER OF EDUCATION PLUS CERTIFICATION

Undergraduate Requirements

Elementary Education (AR 317, EL 421, EL 422)	11
Secondary Certification (AR 318, ED 441, ED 442)	11
Elementary and Secondary Certification	22

Graduate Requirements

Seminar in Learning Resources (CM 600)	3
Educational Psychology (EP 604 or EP 618)	3
Foundations of Education (FE 611, FE 612, FE 613, FE 514, FE 515)	3
Art Education (Select Two: AT 610, AT 611, AT 612, AT 614)	6
AT 613 Research in Art Education	3
GR 615 Elements of Research	3
AR 850 Thesis	3
Studio	9

For description of CM course, see section on COMMUNICATIONS MEDIA; for EP courses, EDUCATIONAL PSYCHOLOGY; for FE courses, FOUNDATIONS OF EDUCATION.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

GRADUATE MINOR IN MEDIA

Graduate students may, with the approval of their adviser, obtain a minor in Media at IUP. The minor consists of a minimum of six semester hours of work in graduate level courses in Media and may include as many hours in Media as are approved by the student's graduate program adviser.

The minor may include any combination of courses offered by the Communications Media Department except CM 630 Classification and Cataloging of Learning Resources, CM 660 Management of Learning Resources Programs and CM 699 Internship. These courses are designed for the professional Media Center Manager rather than the person minor-ing in Media. Media minors may be designed around the list of courses under Communications Media. All courses are three semester hour credits.

The number of semester hours in each of these programs represents the minimum. The student's committee reserves the right to recommend more.

COURSE DESCRIPTIONS

AH 506	ANCIENT MIGRATORY ART	3 s.h.
Survey of painting, architecture, and sculpture of Prehistoric Man; Egypt and the Near East; as well as Art of Primitive Man of later times— The American Indian, African Art and the Art of the Oceanic.		

AH 507 MEDIEVAL ART 3 s.h.
Prerequisite Art History majors, by special arrangement, Art and architecture of Europe during Middle Ages, beginning with a study of Early Christian and Byzantine art, and concluding with art of Romanesque and Gothic periods.

AH 508 ITALIAN RENAISSANCE ART 3 s.h.
Art History majors, by special arrangement. Covers span of Italian art from 1400's through 1850 and Mannerist movement. Special attention paid to great masters of the period.

AH 509 BAROQUE AND ROCOCO ART 3 s.h.
General survey of art from 1575-1775. Will include architecture, sculpture, painting and other arts.

AH 519 MUSEOLOGY 3-6 s.h.
The student will work in the University museum under the supervision of the museum director. Museum techniques and practices will be stressed in an "on-the-job" training situation. The role of the graduate student will be that of "acting curator" of specific areas of his/her choice, and supervising selection and hanging of shows.

AH 522 ART IN AMERICA 3 s.h.
Surveys American art and its relation to development of American ideas and ideals.

AH 523 SEMINAR IN ART CRITICISM 3 s.h.
Explores philosophic theories of art and art products. An attempt to relate these theories to senses, and form itself—and to technical, psychological and cultural values. Primary concepts explored are play, illusion, imitation, beauty, emotional expression, imagination, empathy, creativity and experience. Time will be given to forms of art that are not primarily visual, including music, dance, literature, and poetry.

AH 524 ART OF THE EAST 3 s.h.
Nature of Eastern Art's meaning and place in contemporary world culture.

AH 625 ARCHITECTURAL INFLUENCES IN
A CONTEMPORARY SOCIETY 3 s.h.
Experimental problems in structure and aesthetics as related to architecture. Attempts are made to search out the historical roots of many contemporary styles of architecture.

AH 626 PRE-COLUMBIAN ART 3 s.h.
Art of Mezo-American cultures, Mayas, Aztecs and Incas, as influenced by Oceanic migrations.

AH 628 WORLD ART SINCE 1875 3 s.h.
Discoveries and advances in artistic expression in modern times. Subject matter for study may be found in any or all of the arts.

All art history courses are open as electives to all students.

AR 615 ART SEMINAR 3 s.h.
Opportunities for student to discuss problems in art related to studio interests. Thesis/Show proposals will also be prepared. For MA candidates only.

AR 616 DIRECTED STUDIES 3-6 s.h.
Offered in instances where a particular course is needed by a student, but is not on the regular schedule rotation. Approval must be secured from the adviser, the instructor involved and the Graduate Coordinator.

AR 640 GRADUATE STUDIO IN CERAMICS 3-18 s.h.

Prerequisite—at least one year of undergraduate ceramics. All aspects of hand-forming, decorating, glazing, and firing will be dealt with. This may include body and glaze formulation and reduction, oxidation, salt, wood, and raku firing as well as thrown, coiled, or slab construction or combinations thereof. Includes historic and contemporary ceramics and philosophies of the craft.

AR 644 GRADUATE STUDIO IN FIBERS 3-18 s.h.

Fundamentals of fiber construction and processes. Emphasis on experimental approaches to fiber design and construction. Designed to meet the needs of beginning as well as advanced students.

AR 647 GRADUATE STUDIO IN JEWELRY AND METAL WORK 3-18 s.h.

Advanced study dealing with specialized problems in design and execution of metal work and jewelry. A thesis may be developed depending upon research in one of areas relating to this field, history, materials, tools, processes, or teaching techniques of the craft.

AR 650 GRADUATE STUDIO IN SCULPTURE 3-18 s.h.

An advanced course in which students are expected to work on challenging problems in sculpture. A student may explore one or several sculpture or modeling media.

AR 653 GRADUATE STUDIO IN WOODWORKING 3-18 s.h.

Specialized study and experiences in the design and execution of problems relating to wood as a crafts material. Opportunity is presented to more intensive exploration of materials and processes of this craft employing both hand and power tools.

AR 661 GRADUATE STUDIO IN DRAWING 3-18 s.h.

Drawing as a language and continued development of skill in communication and expression in all kinds of materials and media. Drawing as an intimate work of the artist will be stressed.

AR 662 GRADUATE STUDIO IN OIL PAINTING 3-18 s.h.

Traditional and contemporary methods and techniques in area of plastic painting media. Composition, in relation to modern painters' problems. Opportunity is presented for exploration and specialization in depth as well as breadth.

AR 665 GRADUATE STUDIO IN WATERCOLOR PAINTING 3-18 s.h.

Painting in transparent watercolor, gouache, mixed media and with new water soluble paints, such as casein and acrylic polymer tempera. Traditional, current and experimental approaches with emphasis on design and emotional content.

AR 668 GRADUATE STUDIO IN PRINTMAKING 3-18 s.h.

Prerequisite—AR 217 or its equivalent. Modes, media, material, techniques and processes of graphic arts and their use in expression. The student may concentrate on intensive exploration of one media in depth or explore a number of media for breadth of experience.

Studio courses may be taken for a total of 18 semester hours in one studio. No more than 6 semester hours in one studio may be taken during any one semester.

AT 610 ART AND THE EXCEPTIONAL CHILD 3 s.h.

Designed to consider characteristics and needs of the mentally retarded and the intellectually gifted child with particular emphasis on art aspects of their education.

AT 611 ART CURRICULUM DEVELOPMENT IN ART EDUCATION 3 s.h.

A seminar and study of curricula at all levels. Particular attention given to individual needs of class participants in development of curricula pertinent to their own teaching situations. For those students who have not yet taught, theoretical and practical problems will be examined.

AT 612 SUPERVISION AND ADMINISTRATION IN ART EDUCATION 3 s.h.

Responsibilities, functions and duties of Art Supervisors and Administrators.

AT 613 RESEARCH IN ART EDUCATION 3 s.h.

Required of all Art Education majors. Reviews past and present research focusing upon the methodologies pertinent to the field. Prerequisite for this course, GR 615, is to be scheduled within the first four to eight semester hours. AT 613 must be taken as soon after as possible, but within the first 12 semester hours.

AT 614 HISTORY AND PHILOSOPHY OF ART EDUCATION 3 s.h.

Considers art education in Europe, United States and Canada, designed to give the student background.

AT 654 INTRODUCTION TO ART THERAPY 3 s.h.

A survey of the concepts and theories, applications and procedures of Art Therapy. Consideration of selections of materials and media for varying diagnostic and therapeutic problems, rehabilitary and psychiatric settings, and limitations of the art therapist. Prerequisite is admission to graduate school. Basically the course will serve individuals with clinical backgrounds (psychology, social workers, child care, speech therapy, special education, art education, art therapy), and those with a primary identity in one or more of the arts.

AT 655 ART THERAPY SEMINAR 3 s.h.

Provides practical considerations in therapy to prepare student to enter a practicum experience. Prerequisite is Introduction to Art Therapy 654 or the equivalent.

AT 656 ART THERAPY PRACTICUM 6 s.h.

A professional supervisory team will guide the student in a semester experience in settings where they will practice art therapy. Discussion, analysis, planning, and data gathering will be in the student's area of interest. Minimum required courses for the Art Therapy Degree are the prerequisites.

AT 657 METHODOLOGY IN ART THERAPY 3 s.h.

This course will be a lecture/experiential situation in which the art therapy major will become involved with treatment approaches for use with individuals and groups in various clinical and agency settings.

MASTER OF ARTS IN ART THERAPY

The Master of Arts degree in Art Therapy is designed to fulfill the minimum graduate requirements for an art therapist. Following the guidelines of the American Art Therapy Association, the master's degree in Art Therapy at IUP is designed to provide the theoretical and practical art therapy skills which are applied in clinical, education or rehabilitative settings. The program is an interdisciplinary one of art, art therapy, psychology and related areas. A practicum of 600 hours under the supervision of an art therapist in an applicable setting is required.

In addition to meeting the requirements for admission to the Graduate School, an interview with a portfolio of the candidate's art work will be re-

quired and an evaluation of the candidate's interests in therapeutic work will follow. It is suggested that graduate students in art therapy have a background in human, normal, and abnormal psychology and have background suitable to professional work in the field. Upon the director's advisement students may be required to take additional undergraduate course work if they are found to lack proficiency in art or the social sciences. Graduate credit is not given for undergraduate courses which may be required.

The M.A. in Art Therapy requires the successful completion of a minimum of 42 semester hours.

The following courses are required:

- AT 654 Introduction to Art Therapy (3 s.h.)
- AT 655 Seminar in Art Therapy (3 s.h.)
- AT 656 Art Therapy Practicum (6 s.h.)
- AT 657 Methodologies in Art Therapy (3 s.h.)
- AT 650 Thesis and Research in Art Therapy (3-6 s.h.)
- PC 643 Methods of Intervention for Art Therapy (3 s.h.)

Required out of department courses (minimum number determined by program director and the student's undergraduate preparation):

- PC 554 Developmental Psychology (3 s.h.)
- PC 633 Psychology of Personality (3 s.h.)
- PC 634 Abnormal Psychology (3 s.h.)
- PC 635 Advanced Psychopathology (3 s.h.)
- PC 646 Clinical Group Techniques (3 s.h.)
- PC 681 Family Therapy (3 s.h.)
- EP 662 Psychotherapy and Group Dynamics (3 s.h.)
- CE 646 Encounter and Sensitivity in Counseling (3 s.h.)

Electives may be chosen from the following:

- AR 616 Directed Studies in Art Therapy (3 s.h.)
- PC 545 Principles of Behavior Modification (3 s.h.)
- PC 561 Motivation (3 s.h.)
- PC 574 Adult Development and Aging (3 s.h.)
- PC 578 Psychology of Death and Dying (3 s.h.)
- PC 641 Psychological Assessment I (3 s.h.)
- EP 573 Psychology of Adolescent Education (3 s.h.)
- EP 580 Pupil Adjustment (3 s.h.)
- EP 604 Advanced Educational Psychology (3 s.h.)
- EX 631 Psychology of Exceptional Children and Youth (3 s.h.)
- EX 638 Psychology of the Gifted (3 s.h.)
- EX 639 Psychology of the Mentally Retarded (3 s.h.)
- EX 655 Education of Children with Social and Emotional Maladjustments (3 s.h.)
- GR 615 Elements of Research (3 s.h.)

*Psychopharmacology (Drugs & Behavior) to be offered, Fall 1984.

For descriptions of PC courses, see section on PSYCHOLOGY; for EP courses, see section on EDUCATIONAL PSYCHOLOGY; for EX courses, SPECIAL EDUCATION; for description of GR course, see entry under GENERAL SERVICE COURSES.

The practicum is based upon the minimum AATA education requirements. Practicum course work extends over two semesters and requires at least 600 hours in the field. If conducted during the normal semester,

two to three working days per week are required. The same number of hours may be provided by concentrating summer work in a shortened period or by evening work over a more extended period. The 600 hours will be spent under qualified supervision in agencies which may be in a locality of the student's choice and/or desired area of interest.

The Art Therapy Director assists the student in securing the site and makes scheduled visitations to evaluate the student's progress, modality of treatment and daily supervision, as well as to observe the student functioning as an Art Therapist. Uppermost in such visitations is the quality and applicability of preparation by the student Art Therapist.

COURSE DESCRIPTIONS

AT 654 INTRODUCTION TO ART THERAPY 3 s.h.

A survey of the concepts and theories, applications, and procedures of Art Therapy. Considerations of selections of materials and media for varying diagnostic and therapeutic problems, rehabilitary and psychiatric settings and limitations of the art therapist. Prerequisite is admission to the Graduate School. Basically, the course will serve individuals with clinical backgrounds (psychology, social workers, child care, speech therapy, special education, art education, art therapy), and those with a primary identity in one or more of the arts.

AT 655 ART THERAPY SEMINAR 3 s.h.

Provides practical considerations in therapy to prepare students to enter a practicum experience. Prerequisite is AT 654 or equivalent.

AT 656 ART THERAPY PRACTICUM 6 s.h.

This will be a professional on site experience as an art therapist. The student will assume the staff responsibilities expected at the agencies; this will include art therapy treatment planning, inservice training, attendance at staff meetings. In addition to art therapy group work, the student will work with individuals, couples and families. A professional supervisory team will guide the student in the semester's experiences where they will practice art therapy as interns.

AT 657 METHODOLOGIES IN ART THERAPY 3 s.h.

This course will be a lecture/experiential situation in which Art Therapy majors will become involved with the art therapy approaches for use with individuals and groups of different treatment modalities in various clinical and agency settings. Students will participate in diagnostic and therapeutic processes through art work. (This is a prerequisite to the Art Therapy Practicum, AT 656.)

It is the feeling of the University and the American Art Therapy Association that the acquisition of competence in the professional field demands two academic years of study.

BIOLOGY

Requirements for Admission—to be admitted to the Biology Department, the applicant must have completed the requirements for a bachelor's degree from an accredited college or university which should include a major in biology, one year of inorganic chemistry, one semester of organic and one semester of calculus or statistics. Applicants with undergraduate deficiencies may be required to register for appropriate courses.

The Requirements for Candidacy for an M.Ed. Degree are—the satisfactory completion of 15 semester hours of graduate work, with at least

eight hours of biological sciences. For those students electing the thesis option, requirements are the same as those for MS students beginning with the second paragraph below. For those students electing the non-thesis option, requirements are the same as those for MS students beginning with the third paragraph below.

The Requirements for Candidacy for an MS Degree are—satisfactory completion of 15 semester hours of graduate work, with at least eight hours in core courses.

The selection of an adviser and a committee of at least two additional faculty members to guide the candidate in completing a tentative program and selecting a thesis problem.

An official application for admission to candidacy, including the tentative program which has been approved by the adviser, must be submitted to the Biology Department graduate committee.

Candidates for all degrees are expected to maintain an average of not lower than B. Continuance in the graduate program for those receiving two course grades below the minimum is contingent upon favorable review of the graduate committee.

MASTER OF EDUCATION IN BIOLOGY

Students working for this degree have two options, a non-thesis program with a 33 credit hour requirement and a thesis program with a 30 credit hour requirement. The only way in which these programs differ is in the credit hour requirement noted above and that the thesis is required for the 30 credit hour degree. Students working in either of these programs will complete the appropriate number of hours in accordance with the following requirements:

- I. Professional Development area (nine s.h.)
 - A. Humanistics Studies—three s.h. to be selected from FE 611, 612, and 613.
 - B. Behavioral Studies—three s.h. to be selected from EP 573, 576, 578, 583, 604, CE 639, and EX 631.
 - C. Research—three s.h. GR 615 required for all students (both options)
- II. Specialization Core (six s.h.)

Six s.h. to be selected from BI 661, FE 515 and CM 600. Biology Practicum (BI 661) is strongly recommended.
- III. Subject Matter Concentration (15-18 s.h.)

Fifteen s.h. (for thesis program students) or 18 s.h. (for non-thesis program students) to be selected from BI 532 through BI 699, MI 500, BI 850, GS 530, and CH 651.

For description of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX courses, SPECIAL EDUCATION; for CM courses, COMMUNICATIONS MEDIA; for GS courses, GEOSCIENCE; for CH courses, CHEMISTRY.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

MASTER OF SCIENCE IN BIOLOGY

Students working for this degree will complete 32 semester hours of work in accordance with the following divisions:

- I. Core Courses — 18-20 s.h. BI 601 (Instrumentation), BI 602 (Biometry), BI 610 (Seminar—two s.h.), and BI 850 (two-four credits in thesis) are required courses. The remaining hours of core credits include one morphology-taxonomy course (chosen from BI 532, 546, 551, 575, 576, 578, and 620 through 625), and one physiology course (chosen from BI 553, 652, 653, or 654), and one ecology course (chosen from BI 563, 631, 635, or 640).
- II. Elective Courses — 12-14 semester hours to be selected with the approval of the adviser from the 500 and 600 level Biology courses. (With the exception to BI 661) or from related science and mathematics courses.
- III. Resident Requirements for the MS—the candidate must take a minimum of 26 of the semester hours required for graduation at IUP.
- IV. Research Requirements for the MS—every candidate must present a research thesis on an original topic approved by the candidate's advisory committee. This is programmed as BI 850 (thesis) for two to four credits.
- V. Requirements for Completion of the MS
 - A.
 1. All students in the MS program in the Biology Department must pass a competency examination administered by the department graduate committee. The purpose of this examination is to assure that all of our graduates have a well proportioned knowledge of the field of biology. The examination will also help point out the student's major area of inadequate knowledge or training.
 2. This examination is offered at a specific time twice each year. The student may signify intentions of taking the examination by informing the graduate committee.
 3. The student should plan to complete the entire exam by the end of the second semester of full-time course work (or the equivalent). A second attempt, if necessary, should come in the student's third full-time semester. A third and final attempt is permitted only after petition to, and approval of the Graduate Committee.
 4. This will be the only departmental examination for the Master of Science degree.
 - B. After the thesis has been accepted in its final written form by the candidate's committee and The Graduate School, the candidate will present a public seminar reporting the results of his/her research.

For descriptions of GR courses, see entry under "GENERAL SERVICE COURSES."

COURSE DESCRIPTIONS

In many courses in the Biology Department, additional laboratory time may be required beyond the regularly scheduled periods.

BI 532 COMPARATIVE VERTEBRATE ANATOMY 3 s.h.

Discussion of anatomy of representative vertebrates from a comparative point of view. Stresses major organizational changes observed in vertebrate history. Two hours lecture, 3 hours lab per week. Prerequisite: BI 120.

BI 546 DENDROLOGY 3 s.h.

Identification and the study of the taxonomy, distribution, silvics, wood properties, mensuration and utilization of woody plants. Two hour lecture and three hours lab/week. One or more Saturday and/or weekend field trips.

BI 551 TAXONOMY OF PLANTS 3 s.h.

Includes collection, identification, and classification of vascular plant species with special emphasis on family characteristics and phylogeny. Prerequisite: Plant Biology.

BI 553 PHYSIOLOGY OF PLANTS 4 s.h.

A comprehensive study of physiological bases for organization and function of living plants. Current literature is emphasized. Prerequisite: Biochemistry. Closed to students with undergraduate Plant Physiology, BI 351.

BI 563 LIMNOLOGY 3 s.h.

An investigation into the physical, chemical, and biological aspects of inland waters and their inter-relationships. Saturday or Sunday labs may be required. Prerequisite: Ecology.

BI 572 RADIATION BIOLOGY 3 s.h.

Basic aspects of nuclear physics, phenomena of radioactive isotopes and biological effects and uses of such isotopes. Lab work utilizes instruments for detection and measurement of radioactive nuclides. Prerequisites: two years Biology, one year Physics, and General, Organic and Biochemistry.

BI 575 MAMMALOGY 3 s.h.

General discussion of mammals emphasizing systematics, distribution, and structure-function modifications related to their evolution. A paper is required.

BI 576 PARASITOLOGY 3 s.h.

The parasitic protozoa, flatworms and roundworms. Major emphasis upon species infesting man and includes their structure, physiology, ecology, life cycles and pathogenicity. Arthropods involved in parasite transmission included. Prerequisites: one year Biology, Vertebrate and Invertebrate Zoology.

BI 578 MYCOLOGY 3 s.h.

The systematics, morphology and physiology of fungi, with emphasis on economically important and experimentally useful Myxomycophyta and Eumycophyta. Not open to students with undergraduate BI 381, Mycology.

BI 585 MICROTECHNIQUE 3 s.h.

Procedures involved in production of microscope slides. Techniques of preparing whole mounts, microtome sections and serial sections of both plant and animal materials.

- BI 597 INTRODUCTION TO ROCKY MOUNTAIN ECOLOGY 4 s.h.
Flora and fauna of each of the life zones described, collected, and identified. Takes place in Bridger-Teton National Forest Wyoming. Tents, food, horses, etc. are provided by professional outfitter. Offered only in the summer. No prerequisites.
- BI 601 INSTRUMENTATION 3 s.h.
Introduction to the variety of techniques and procedures of instrument-assisted data gathering appropriate to the biologist.
- BI 602 BIOMETRY 3 s.h.
The choice and application of standard, efficient, and practical statistical techniques for data analyses in common biological research situations.
- BI 610 BIOLOGY SEMINAR 1 s.h.
An opportunity to become acquainted with various areas of current research in biology. One hour meeting per week.
- BI 620 PROTOZOOLOGY 3 s.h.
Common and representative genera of all groups of free-living protozoa. Emphasis placed upon structure, physiology, ecology and life histories of these organisms. An independent research project is required.
- BI 621 PRINCIPLES OF ANIMAL TAXONOMY 3 s.h.
Study of classification system and its application to identification of animals. Basic principles of taxonomy rules of nomenclature, a synoptic history of classification and the "old" and "new" taxonomy will be included. A taxonomic field study is required.
- BI 622 ADVANCED ORNITHOLOGY 3 s.h.
A detailed study of bird populations, behavior, and movement including the annual cycle. Prerequisite: identification by site and song of local birds.
- BI 623 ANIMAL MORPHOGENESIS 3 s.h.
Factors that influence and control the differentiation of organs, tissues, and cells. Emphasis is placed on experimental procedures and methods. Prerequisites: Embryology of Comparative Anatomy, Organic Chemistry and Biochemistry, and Genetics.
- BI 624 ADVANCED ENTOMOLOGY 3 s.h.
Insect morphology, including external and internal organization of different species of insects. Comparisons between species included. An independent research study and seminar presentation required.
- BI 625 HERPETOLOGY 3 s.h.
A comprehensive survey of the classes Amphibia and Reptilia, including their classification, structure, origin, evolution, phylogenetic relationships, distribution, and natural history. Special emphasis is placed on the herpetofauna of Pennsylvania.
- BI 631 PLANT ECOLOGY 3 s.h.
Nature and distribution of vegetation in relation to environmental factors. Field investigations of local plant communities constitute bulk of lab work. Prerequisites: Field Botany, Plant Taxonomy or general knowledge of local flora.
- BI 635 TAXONOMY AND ECOLOGY OF BACTERIA 3 s.h.
Isolation, cultivation, classification and ecology of major groups of bacteria. Special emphasis on principles of bacterial taxonomy and ecology. Prerequisite: Microbiology.
- BI 640 ANIMAL ECOLOGY 3 s.h.
Effect of environmental factors on animals, animals as members of communities, their trophic relationships, their ecological distribution, population dynamics, and aspects of animal behavior. A field or lab problem is required.

BI 652 MICROBIAL PHYSIOLOGY 4 s.h.

Physiological reactions involved in growth, reproduction, and death of microbes. Energy production, substrate transport, metabolism, regulatory and control mechanisms are discussed. Prerequisites: Microbiology and Biochemistry.

BI 653 ANIMAL PHYSIOLOGY 4 s.h.

Digestion and molecular transport of nutrients, gaseous exchanges, excretion, muscular activity, and control by endocrine and neural elements. Prerequisite: Animal Biology.

BI 654 ENDOCRINOLOGY 4 s.h.

Phylogeny, embryology, micro-anatomy, and physiology of the endocrine tissues. Prerequisites: course in anatomy and physiology.

BI 663 IMMUNOLOGY 3 s.h.

Study of anatomy and function of immune system, physical and chemical properties of antigens and antibodies, nature of antigen-antibody interactions, humoral and cell mediated immune responses and immunopathology. Prerequisites: Biochemistry and Microbiology.

BI 699 INDEPENDENT STUDIES 1-3 s.h.

Individual or small group instruction, by tutorial and intensive literature survey, in a particular area not covered by a student's course-work or thesis research. By arrangement with instructor and with approval of graduate director. Maximum of six hours to be used toward degree.

MI 500 PROBLEMS IN MARINE SCIENCE 3 s.h.

Independent study for the advanced student in marine sciences. Topics are selected from areas offered by the Marine Consortium and studies are directed by the instructor in that area. Prerequisite: Consent of instructor.

BI 850 THESIS 2-4 s.h.



BUSINESS

The College of Business offers three separate graduate programs: The Master of Business Administration (MBA), the Master of Education in Business (M.Ed.), and the Master of Science in Business (M.S.).

MASTER OF BUSINESS ADMINISTRATION (MBA)

The Master of Business Administration program is intended to serve the needs of both junior and senior level business and industrial executives seeking additional knowledge and skills to do a more efficient job of problem solving and managerial decision making. Also, the program serves the needs of students seeking advanced training in business management prior to entry into a business career. The program is offered on a part-time or full-time basis.

Core I of the program consists of 10 undergraduate prerequisite courses (31 s.h.) that provide a foundation in the basic concepts and techniques used in today's business world.

Core II consists of ten graduate level courses or thirty semester hours. Of these, seven courses are required in the functional and applied areas of business. The remaining courses are electives which may be concentrated in one functional area, such as Accounting, Finance, Marketing, Management Information Systems or Management, by those students wishing to develop an academic specialty within the broader field of business administration, or the electives may be taken from any combination of those areas or, with permission, from other related areas outside the College of Business by those students wishing a Business degree covering a broader range.

Normally the student with an undergraduate degree in Business Administration would either go directly to the Core II subjects or would have a minimal number of Core I or prerequisite subjects remaining.

However, a student with no undergraduate background in Business Administration would need to take most or all of the prerequisite classes. Therefore, for the student with no Business Administration background, completing both Core I and Core II will normally require two years of full-time study to achieve the MBA degree. For the student with a recent bachelor's degree in Business Administration, the requirements for the MBA can normally be completed in one year of full-time study.

Students who did not have all the Core I courses as undergraduates may take these courses at IUP or, with prior permission, at other accredited institutions. In some instances, course credit may be earned by examination for some prerequisite courses. In some cases, credit may be given for other parallel educational experiences. For example, there are certain corporate training programs in computer languages that might be accepted in lieu of the introductory undergraduate computer course. Please contact the Director of Graduate Studies in Business for information concerning the prerequisite courses.

Students seeking enrollment in the MBA program or M.S. in Business program must take the Graduate Management Admission Test (GMAT) before being admitted to the program. Information about the GMAT can be obtained from the Educational Testing Services, Princeton, NJ 08540 or from the IUP Academic Services and Testing Center (Telephone 412-357-3050).

COURSE REQUIREMENTS FOR THE MBA DEGREE

Core I: 31 s.h. in the following undergraduate courses with a grade of "C" or better: AG 201, AG 202, FS 310, MK 320, AD 235, EC 122, MG 360, MA 121, FS 215, and FS 241. Students will be given credit for Core I, undergraduate prerequisite courses taken at IUP or at other appropriate institutions with prior permission. Contact Director of Graduate Studies in Business to ascertain the appropriateness of such courses and to obtain permission to take courses at any other institutions. See IUP undergraduate catalog for course descriptions.

Core II: (a) 7 courses (21 s.h.) in the following graduate courses: AG 607*, EC 634, FS 601, FS 630, FS 640, MG 633, and MK 603.

(b) 3 courses (9 s.h.) chosen from among the following elective courses:

Accounting: AG 501, AG 512, AG 531, AG 600, AG 603, AG 608.

Finance/MIS: FS 510, FS 520, FS 522, FS 550, FS 551, FS 570, FS 580, FS 602, FS 604, FS 631, FS 632, FS 635, FS 641, FS 642.

Management/Marketing: MG 630, MG 631, MG 632, MG 635, MG 636, MG 642, MG 645, MK 521, MK 530, MK 531.

Other: 581/681 Special Topics courses offered by the AG, FS, MG and MK Departments; and other business-related courses with the prior approval of the Director of Graduate Studies in Business.

Students may take one 500 level course without permission of Director of Graduate Studies in Business. Additional 500 level courses require prior approval. Students may elect graduate level courses outside of the College of Business which are in related fields as electives with approval of the Director of Graduate Studies in Business.

*Students with undergraduate concentrations in Accounting are not eligible for AG 607. Undergraduate Finance majors are not eligible for FS 630. See Director of Graduate Studies in Business for alternative course selections.

MASTER OF EDUCATION IN BUSINESS (M.Ed.)

The Master of Education in Business degree is designed to permit business teachers to broaden their understanding of business, to study current teaching procedures, and to update their knowledge in the new technologies used in business.

Business Education teachers with appropriate prerequisites can earn, at the graduate level, certification in accounting, data processing, marketing, and distributive education while pursuing the Master of Education degree program.

Distributive Education teachers seeking to broaden their background in marketing, merchandising, and management may emphasize these areas in the Master of Education degree program.

While the program was designed for students who have completed the undergraduate curricula in Business Education or Distributive Education, including certification requirements, other students may apply but will be required to complete the undergraduate Business Education requirements as a prerequisite. Individuals without an undergraduate degree in business may pursue graduate work leading to certification in Distributive Education.

Cooperative Education certification may be earned by teachers holding a valid Pennsylvania teaching certificate or its equivalent.

Upon admission to the Graduate School, each student is assigned an adviser who will assist the student in scheduling his/her program of studies. Prior to admission to candidacy for the degree of Master of Education in Business, the student must take the Graduate Record Examination aptitude test. Information about this examination can be obtained from the Educational Testing Services, Princeton, NJ 08540 or from the IUP Academic Services and Testing Center (Telephone 412-357-3050).

COURSE REQUIREMENTS FOR THE M.Ed. DEGREE

Students must complete 30 semester hours for the degree distributed as follows:

- I. Professional Development Area—3 courses (9 s.h.)
 - A. Humanistic Studies (3 s.h.)—One of the following: FE 611, FE 612, FE 613, or FE 514.
 - B. Behavioral Studies (3 s.h.)—One of the following: EP 604, EP 573, EP 576, EP 578, CE 639, or EX 631.
 - C. Research (3 s.h.)
GR 615 Elements of Research
- II. Specialized Core—3 courses (9 s.h.)
AD 610, BE 650 and either BE 660 or BE 661 (NOTE: Students seeking certification in Distributive Education may substitute DE 510 or DE 513 for BE 660 or 661.)
- III. Subject Area and/or Thesis—4 courses (12 s.h.)
AD 850 (3 s.h.), Thesis (optional) and/or any additional graduate courses listed in this catalog under AD, AG, BE, DE, FS, MK or MG. Other related courses may be allowed with the consent of the Director of Graduate Studies in Business.

Courses in Specialized Core Area and Subject Area should be scheduled early in the student's program.

For description of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX course, SPECIAL EDUCATION.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

MASTER OF SCIENCE IN BUSINESS (M.S.)

The Master of Science in Business degree is designed primarily for business people, industrial, personnel and government employees who are interested in furthering their academic careers through study in Business

Administration. The program is designed to allow these people to specialize in an area of Business Administration and to take more courses in their chosen specialty than would be allowed in the MBA program. In the MS in Business program, such students may elect to take four courses of their graduate work in the area of their chosen specialization.

In order to familiarize the student with the full range of business activities, the student is required to take a series of undergraduate prerequisite courses identical to the "Core I" requirements or undergraduate prerequisite courses that are required by the MBA program. If the student did not have these courses as an undergraduate, they will be taken at IUP, or, with prior permission, they may be taken at some other accredited institutions. In some instances, course credit may be given by examination for these prerequisite courses. Please contact the Director of Graduate Studies in Business for information concerning the prerequisite courses.

The prospective MS in Business student will submit a written statement explaining their career goals and the area of specialization or functional field where they wish to concentrate to the Director of Graduate Studies in Business. The Director and the student will develop a program tailored for the student's specific needs, to include a listing of courses to be taken for completion of the degree requirements.

COURSE REQUIREMENTS FOR THE M.S. DEGREE

- I. Undergraduate Prerequisite Courses: 31 s.h. in the following undergraduate courses: AG 201, AG 202, FS 310, MK 320, AD 235, EC 122, MG 360, MA 121, FS 215, and FS 241.

Students will be given credit for undergraduate prerequisite courses taken at IUP or at other appropriate institutions with prior permission. Contact Director of Graduate Studies in Business to ascertain the appropriateness of such courses and to obtain permission to take courses at any other institutions. See IUP undergraduate catalog for course descriptions.

- II. Graduate Courses (30 s.h. distributed as follows):

- A. Three (3) required Business Courses (9 s.h.): AG 607, AD 610, and FS 640.

- B. Business Elective Courses—4 to 5 courses (12 to 15 s.h.) from the following list: AG 501, AG 512, AG 531, AG 600, AG 602, AG 603, AG 608, AD 512, AD 515, AD 612, AD 614, AD 632, AD 633, AD 634, AD 670, FS 510, FS 520, FS 522, FS 550, FS 551, FS 570, FS 601, FS 602, FS 604, FS 630, FS 631, FS 632, FS 635, FS 641, FS 642, MK 521, MK 530, MK 531, MK 600, MK 601, MK 603, MG 630, MG 631, MG 632, MG 633, MG 635, MG 636, MG 642, MG 645.

Other graduate level courses closely related to the student's career plans may be taken as electives. Prior permission of the Director of Graduate Studies in Business is required.

- C. Research Area—2 to 3 courses (6-9 s.h.):

1. GR 516 or FS 601
2. FS 604 or MK 521

3. 850, Thesis in appropriate department in College of Business if elected. Students not electing a thesis will take an additional elective course as prescribed in their course of studies by the Director of Graduate Studies in Business.

COURSE DESCRIPTIONS

Accounting

AG 501 ADVANCED PRINCIPLES OF ACCOUNTING 3 s.h.

Study of business combinations and consolidations as well as accounting problems of specialized nature such as goods on consignment, installment sales, receivership accounts, agency and branch accounting. Prerequisite: AG 302 or equivalent (nine semester hours of Accounting).

AG 512 ADVANCED COST ACCOUNTING 3 s.h.

Theory, preparation and use of budgets, analysis of cost variances, direct costing, and extensive analysis of various cost-control and profit-planning programs. Prerequisite: AG 311.

AG 531 AUDITING 3 s.h.

A study of auditing theory and practical application of auditing standards and procedures to the verification of accounts and financial statements, working papers, and audit reports. Prerequisite: AG 301.

AG 581 SPECIAL TOPICS IN ACCOUNTING 3 s.h.

Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending on specific topics. May be repeated by specific approval. Prerequisite: Permission of the instructor and Director of Graduate Studies in Business.

AG 600 ACCOUNTING SYSTEMS 3 s.h.

Accounting principles applied to constructing accounting systems. Special attention is given to problems of management as they relate to accounting systems by developing a system to give management the information desired for effective operation of business. Prerequisite: AG 301.

AG 602 ADVANCED TAX ACCOUNTING 3 s.h.

Develops further knowledge of federal income tax laws as they apply to corporations, estates, and trusts. Federal estate tax and gift tax are also explored. Prerequisite: AG 421.

AG 603 FINANCIAL STATEMENTS ANALYSIS 3 s.h.

Detailed analysis and interpretation of financial statements using the various purposes and coverage of the accounting principles underlying the data to be analyzed. Prerequisite: AG 301.

AG 607 MANAGEMENT ACCOUNTING 3 s.h.

Designed for management personnel who are not accountants but need to understand the accounting process and the use of accounting information by management in making decisions and in performance evaluation. Prerequisite: AG 202. Not open for credit for students with constructive credit for AG 311.

AG 608 SEMINAR IN ACCOUNTING ISSUES 3 s.h.

Designed to offer students the opportunity to explore the conceptual framework for accounting and reporting and to study, research, and debate various controversial issues of current interest to the accounting profession as well as any other accounting area of mutual interest to them and their instructor. The theme of the seminar may be different every time it is offered. Prerequisite: AG 302 or instructor's permission.

AG 681 SPECIAL TOPICS IN ACCOUNTING 3 s.h.

Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending upon the interests of instructor and students with instructor choosing specific topics. May be repeated by specific approval. Prerequisite: Permission of the instructor and Director of Graduate Studies in Business.

AG 699 INDEPENDENT STUDY IN ACCOUNTING 1-3 s.h.

Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. Prerequisite: Consent of instructor, departmental chairperson, and Dean, College of Business.

AG 850 THESIS 1-6 s.h.

For students writing the thesis, AG 850 should be scheduled for the semester in which the student plans to complete his/her work. The thesis may be a non-committee thesis (1-3 s.h.) with one faculty member serving as the student's adviser; or a committee thesis (4-6 s.h.) for which the student's adviser, two additional faculty members, Director of Graduate Studies in Business, and/or the representative of the Dean, College of Business, may constitute the committee.

Administrative Services and Business Education

AD 512 ADMINISTRATIVE OFFICE SERVICES 3 s.h.

Presentation of fundamental principles and practices used in the development of an office. Specialized areas such as systems analysis work simplification, forms design, word processing, office machines and equipment, records management, office design and layout, office location and physical environment, office supervision, office manuals, and development of office personnel will be discussed.

AD 515 RECORDS ADMINISTRATION 3 s.h.

Development of the principles of records administration including creation, use, maintenance, and destruction. Storage facilities, records classification, forms analysis, control of records, as well as micro-image systems will be discussed.

AD 610 BUSINESS COMMUNICATIONS AND REPORT WRITING 3 s.h.

Study and comparison of effective communications. Emphasis is on positive approach, clear statements, good form and structure. Organization and preparation of reports used in business, government, and education. Techniques of collecting, interpreting, and presenting information useful to executives.

AD 612 OFFICE ORGANIZATION AND MANAGEMENT 3 s.h.

Duties and responsibilities of office manager, principles of practical office management and their application. Includes survey and analysis development of manuals and their use, selection, training, pay and promotion of office employees, controlling expenses and measuring office efficiency, quality and quantity standards, purchase and use of equipment and report writing.

AD 614 EXECUTIVE SECRETARIAL TRAINING 3 s.h.

Stresses application of secretarial skills and knowledge and importance of good human relations in offices. Develops methods of complementing secretarial training so that high school graduates may become competent, proficient, and well-adjusted secretaries.

AD 632 CURRENT BUSINESS ECONOMIC PROBLEMS 3 s.h.

Provides opportunity for students to gain insights into relationships of business to many facets of society, impact of major societal groups upon business, and nature of obstacles that businessmen face in day-to-day operations. Review and analysis of basic economic concepts and principles will serve as a basis for study of selected economic problems of current interest and concern to business and society.

AD 633 CASE PROBLEMS IN BUSINESS LAW 3 s.h.

Deals with solution of case problems as applied to various topics in the field of business law. Prerequisite: AD 235 or equivalent.

AD 634 CONSUMER ECONOMIC PROBLEMS 3 s.h.

Program for the education of intelligent consumers in how to gain the maximum satisfaction from goods and services. An effort will be made to develop an appreciation of the problems of the producer and distributor as well as the consumer.

AD 670 ECONOMIC BACKGROUNDS OF BUSINESS 3 s.h.

Overview of economic environment in which business and other agencies operate. Students will gain a broad perspective of business operation through such topics as business organization and management, consumption of goods, business risks, business cycle, budgeting and investments. Not open to business majors, but is designed as a general studies for other programs.

AD 699 INDEPENDENT STUDY IN ADMINISTRATIVE SERVICES 1-3 s.h.

Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. Prerequisite: Consent of instructor, departmental chairperson, and Dean, College of Business.

BE 650 PRINCIPLES AND PROBLEMS OF BUSINESS EDUCATION 3 s.h.

Surveys basic principles and practices of Business Education. Among the topics considered are: history of the high school business program, purposes, attitudes of management and labor toward education, relationships of general education to Business Education, and trends in the field.

BE 660 IMPROVEMENT OF INSTRUCTION IN SECRETARIAL COURSES 3 s.h.

Provides business teachers with a working philosophy and practical approach to teaching of secretarial subjects—shorthand, typewriting, transcription, and office practice. Teaching procedures basic to development of vocational proficiency in shorthand, typewriting, transcription, and office practice including: content, methods, teaching aids, available instructional materials, measurement of skills, and standards of achievement.

BE 661 IMPROVEMENT OF INSTRUCTION IN ACCOUNTING AND BASIC BUSINESS COURSES 3 s.h.

Problems and techniques in teaching accounting and basic business courses including objectives, place and purpose of accounting and basic business courses, curricular organization, teaching techniques, instructional materials, resource materials, course standards, testing, and evaluation. For experienced or prospective high school vocational-technical school, and community college teachers of accounting, general business, consumer economics, business mathematics, economics, and business principles and management.

BE 676 SPECIAL STUDIES IN BUSINESS AND DISTRIBUTIVE EDUCATION 1-6 s.h.

Special topics in Business and Distributive Education. Topics will be announced well in advance of registration.

BE 699 INDEPENDENT STUDY IN BUSINESS EDUCATION 1-3 s.h.

Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. Prerequisite: Consent of instructor, departmental chairperson, and Dean, College of Business.

BE 850 THESIS 1-6 s.h.

For students writing the thesis, BE 850 should be scheduled for the semester in which the student plans to complete his/her work. The thesis may be a non-committee thesis (1-3 s.h.) with one faculty member serving as the student's adviser, or a committee thesis (4-6 s.h.) for which the student's adviser, two additional faculty members, Director of Graduate Studies in Business, and/or the representative of the Dean of the College of Business may constitute the committee.

**DE 510 METHODS & EVALUATION IN
DISTRIBUTIVE EDUCATION I 3 s.h.**

To acquaint prospective teacher-coordinators with objectives of vocational distributive education, including state plan and curriculum. To understand programs in organizing, administering, and supervising a complete cooperative program.

**DE 513 METHODS & EVALUATION IN
DISTRIBUTIVE EDUCATION II 3 s.h.**

Acquaints students with basic principles of group and individual instruction in various subject matter areas, as well as methods of presentation. Students prepare unit plans, lesson plans, demonstrations, and evaluations. Prerequisite: DE 510 or DE 413.

DE 620 RETAIL ORGANIZATION AND MANAGEMENT 3 s.h.

Directed toward problems of retail management. Includes present-day trends in retailing, personnel management, merchandise control, pricing, promotion, services, accounting, and expense control.

**DE 640 INTERNSHIP IN OFFICE AND
DISTRIBUTIVE OCCUPATIONS 4 s.h.**

Students who do not have extensive business experience are given the opportunity to work full time for six weeks during the summer in a business position under supervision. Evening seminars are held weekly to discuss problems related to work experience program. A written report of the experience will be required. Individualized instruction course.

**DE 653 ADMINISTRATION AND SUPERVISION OF
VOCATIONAL EDUCATION 3 s.h.**

An introductory course in administration and supervision of vocational education. Historical background and problems connected with budgeting procedures and practices, teacher qualifications, certification, selection and assignments, in-service programs, rating and evaluating vocational techniques, classroom and personnel supervision, vocational teachers' conferences, curriculum construction and revision, selection and maintenance of equipment, establishing and using standards of achievement, guidance selection, placement and follow-up programs will be covered in this course.

DE 654 COOPERATIVE VOCATIONAL EDUCATION 3 s.h.

To develop administrative procedures necessary for planning, organizing, and coordinating cooperative vocational education programs. Major topics include historical background of cooperative vocational education programs, program development, supervision, public relations, the teacher coordinator and the job, labor laws governing such a program, and desired educational outcomes. Leads to Cooperative Education Teacher certification. Prerequisite: DE 653.

DE 699 INDEPENDENT STUDY IN DISTRIBUTIVE EDUCATION 1-3 s.h.

Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. Prerequisite: Consent of instructor, departmental chairperson, and Dean, College of Business.

Finance/MIS

FS 510 FINANCIAL INSTITUTIONS AND MARKETS 3 s.h.

Review of entire structure of financial institutions, money and capital markets, of which the business enterprise is both a supply and demand factor, and structure and dynamics of interest-rate movements. Prerequisites: EC 325, FS 324.

FS 520 INVESTMENT ANALYSIS 3 s.h.

Integrates the work of the various courses in the finance areas and familiarizes the student with the tools and techniques of research in the different areas of investments. Prerequisites: AG 301, FS 310, FS 324.

FS 522 SEMINAR IN FINANCE 3 s.h.

A course primarily for the senior Finance major, covering topics in all areas of finance by using recent articles, cases, discussions, speakers and a financial simulation game. Prerequisites: FS 310, FS 320, FS 324.

FS 550 DATA BASE THEORY AND APPLICATION 3 s.h.

The analysis of data structures and data base, management systems and their implementation in COBOL. Prerequisite: CO 220 or FS 352, and FS 350.

FS 551 SYSTEMS ANALYSIS 3 s.h.

Develops understanding of concepts and techniques, involving conventional and structured approaches to analyzing problems of business information systems, systems definition feasibility, as well as quantitative and evaluative techniques of business information systems analysis. Prerequisite: FS 352 or CO 220.

FS 570 SYSTEMS DESIGN 3 s.h.

Students learn tools and techniques for design of a business system. Along with classroom discussions of principles and techniques for analyzing, designing, and constructing the system, students will formulate system teams to analyze the problems of an existing business information system, to design an improved system and to control implementation of new system. Prerequisites: FS 451/551, FS 450/550.

FS 580 DISTRIBUTED BUSINESS INFORMATION SYSTEMS 3 s.h.

Prerequisite: FS 451/551 or by instructor's permission.

FS 581 SPECIAL TOPICS IN FINANCE OR MANAGEMENT INFORMATION SYSTEMS 3 s.h.

Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending upon the interests of instructor and students with instructor choosing specific topics. May be repeated by specific approval. Prerequisite: Permission of the instructor and Director of Graduate Studies in Business.

FS 601 QUANTITATIVE METHODS 3 s.h.

Introduction to the concepts and methods of scientific problem solving in management. Students will learn to formulate mathematical models of complex decision problems and to solve these problems using quantitative methods. Topics covered include linear programming, inventory models, network models, waiting line models, and simulation. Prerequisite: FS 215.

FS 602 SEMINAR IN MANAGEMENT SCIENCE 3 s.h.

Builds upon basic concepts developed in FS 601 dealing with the theory and application of mathematical models in an organizational environment. This course is intended for the student who will actually be working with such models in his/her future occupation. Topics to be covered include: more advanced methods of linear programming, non-linear programming, dynamic programming, and simulation. Prerequisites: FS 601, MA 121, MA 122.

FS 604 SEMINAR IN METHODOLOGY OF BUSINESS RESEARCH 3 s.h.

Designed to help students acquire a basic understanding of the research process and a knowledge of the research methods needed in the design and execution of a competent applied behavioral research. Emphasis will be on measurement and scaling, survey research, and data analysis. Prerequisite: GR 516 or FS 601.

FS 630 FINANCIAL MANAGEMENT 3 s.h.

An extension of basic managerial finance, dealing with the theory and practice of analyzing companies, financial planning, capital budgeting, management of working capital, and obtaining funds for the corporation. Prerequisite: FS 310.

FS 631 ADVANCED FINANCIAL MANAGEMENT 3 s.h.

Purpose is to provide the business manager with various approaches and methods for solving capital budgeting decisions and evaluating investment proposals. Topics will include: capital budgeting techniques and applications, decisions under certainty and uncertainty, capital rationing and methods of evaluating and classifying investments. Prerequisite: FS 630.

FS 632 SEMINAR IN FINANCE 3 s.h.

Covers topics in all areas of finance by using recent articles, cases, discussions, speakers, and a finance simulation game. Designed to bring together all aspects of finance. Prerequisite: FS 630.

FS 635 PRINCIPLES OF INVESTMENTS IN SECURITIES 3 s.h.

Introduces many forms of investment possibilities which exist. Attention is given to operation of stock markets, concepts and terminology of investing, mutual funds and their function, investment clubs and problems involved in making investments through brokers, bankers, and stock promoters.

FS 640 MANAGEMENT INFORMATION SYSTEMS 3 s.h.

Introduces techniques involved in organizing computer-based management information systems and the concepts of systems analysis and design including problem definition, data gathering, information analysis, presentation techniques, implementation planning, systems control, and documentation is presented. Relationship between these techniques and the management of modern business organization is stressed. Exercises and case studies used to develop student's ability to use the various systems methods presented in solving informational problems of modern business. Prerequisites: AG 202 and FS 241 or equivalent.

FS 641 BUSINESS DATA PROCESSING I 3 s.h.

Covers the theory operation of remote computer terminals. The BASIC language is used to write computer programs for Business Mathematics and Bookkeeping problems for the Business Education and Distributive Education teacher. Interactive programs utilizing the computer will be used for this training. Not open for students with credit for FS 451/551.

FS 642 BUSINESS DATA PROCESSING II 3 s.h.

Develop the principles of COBOL language programming with specific applications for the teachers of Business and Distributive Education. The course builds upon the basic concepts of data processing developed in FS 641. Special emphasis placed on computer-based instruction and programmed instruction as used with the remote terminals. The value of library programs will be demonstrated. Prerequisite: FS 641 or equivalent. Not open for students with credit for FS 470/570.

FS 681 SPECIAL TOPICS IN FINANCE OR MANAGEMENT INFORMATION SYSTEMS 3 s.h.

Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending upon the interests of instructor and students with instructor choosing specific topics. May be repeated by specific approval. Prerequisite: Permission of the instructor and Director of Graduate Studies in Business.

FS 699 INDEPENDENT STUDY IN FINANCE OR MANAGEMENT INFORMATION SYSTEMS 1-3 s.h.

Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. Prerequisite: Consent of instructor, departmental chairperson, and Dean, College of Business.

FS 850 THESIS 1-6 s.h.

For students writing a thesis, FS 850 should be scheduled for the semester in which the student plans to complete his/her work. The thesis may be a non-committee thesis (1-3 s.h.) with one faculty member serving as the student's adviser or a committee thesis (4-6 s.h.) for which the student's adviser, two additional faculty members, Director of Graduate Studies in Business, and/or the representative of the Dean of the College of Business may constitute the committee.

Management

MG 630 MANAGEMENT THEORY 3 s.h.

Study of development, nature, and meaning of basic functions of management. Emphasis will be placed upon functional activities of an organization at all levels of management and the application of these principles. Prerequisite: MG 360.

MG 631 MANAGEMENT DEVELOPMENT AND TRAINING 3 s.h.

A survey of the major aspects, trends, and methodologies in management development and training as these specializations are being practiced in the enterprises in the advanced western nations. Prerequisite: MG 360.

MG 623 SEMINAR IN PERSONNEL 3 s.h.

Designed to offer the MBA student the opportunity to research, study, and discuss various theories, principles, concepts and issues of current interest to business and personnel managers. The case method will be emphasized and the focus or theme of the seminar may be different each time it is offered. Prerequisite: MG 360.

MG 633 ORGANIZATIONAL ANALYSIS 3 s.h.

An integrative course oriented toward an empirical analysis of the phenomena and theories of large, complex, formal organizations. Intergroup phenomena are also treated as they pertain to the larger organization. Special study is made of the organization as an economic, social decision-making, bureaucratic and political system. The analysis and design of organizations is viewed from the number of perspectives including classical theory and case analysis to illustrate and extend the major topics of the course. Prerequisite: MG 360.

MG 635 SEMINAR IN MANAGEMENT AND ORGANIZATIONAL LEADERSHIP 3 s.h.

Studies of theory and research in the leadership of groups and organizations with application to the management fields of business, industry and labor. The debate, research, and study of controversial leadership issues of current interest to management and preparation of a research paper by the student in his/her occupational interest area is required. Prerequisite: MG 311 and permission of departmental chairperson and/or instructor.

MG 636 THE EVOLUTION OF MANAGEMENT 3 s.h.

This course examines the backgrounds, roles and influences of major contributors and analyzes the various trends and movements in management thought. Prerequisite: MG 360.

MG 642 HUMAN RELATIONS IN BUSINESS 3 s.h.

Study of human motivations and their constructive application to all aspects of business. Psychological basis of human relations will be developing as it applies in the business world. Major topics include employer-employee relations, labor relations, stockholder relations, customer relations, community relations and public relations. Prerequisite: MG 360.

MG 645 CASE PROBLEMS IN BUSINESS HUMAN RELATIONS 3 s.h.

Application of principles of personnel management in solution of problems in human relations. Students will be required to solve realistic problems in human relations found at all echelons of management. Emphasis will be placed on actual problems encountered in day-to-day work activities. Prerequisite: MG 642 or equivalent.

MG 681 SPECIAL TOPICS IN MANAGEMENT 3 s.h.

Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending upon the interests of instructor and students with instructor choosing specific topics. May be repeated by specific approval. Prerequisite: Permission of the instructor and Director of Graduate Studies in Business.

MG 699 INDEPENDENT STUDY IN MANAGEMENT 3 s.h.

With the approval of the department, students will select one or more topics of critical importance in the field and will meet with faculty for independent reading, analysis, and evaluation. Prerequisites: Approvals of department chairperson and Director of Graduate Studies in Business.

MG 850 THESIS 1-6 s.h.

For students writing the thesis, MG 850 should be scheduled for the semester in which the student plans to complete his/her work. The thesis may be a non-committee thesis (1-3 s.h.) with one faculty member serving as the student's adviser or a committee thesis (4-6 s.h.) for which the student's adviser, two additional faculty members, Director of Graduate Studies in Business, and/or the representative of the Dean of the College of Business may constitute the committee.

Marketing

MK 521 MARKETING RESEARCH 3 s.h.

Research procedures and techniques applicable to problem solving in the marketing field. Critical analysis of research techniques with considerable emphasis placed on the use of information gathered. Prerequisite: MK 320.

MK 530 INTERNATIONAL MARKETING 3 s.h.

International marketing is analyzed with consideration given to the significance of government regulation, organization structures of export and import enterprises, and credit policies. Prerequisite: MK 321.

MK 531 INDUSTRIAL MARKETING 3 s.h.

Considers major activities involved in marketing of industrial goods and services. Prerequisite: MK 320.

MK 600 MARKETING 3 s.h.

Study of risks, costs, and methods of distribution including analysis of such problems as research, competition, pricing, and laws in marketing goods from manufacturer to producer to consumer. Prerequisite: MK 320.

MK 601 SALES PROMOTION AND ADVERTISING 3 s.h.

Basic principles of sales promotion and advertising together with consideration of the major problems encountered in management of activities. Emphasized determination of basic promotional strategy, selection of advertising media, determining advertising appropriations, and advertising research. Prerequisite: MK 320.

MK 603 MARKETING MANAGEMENT 3 s.h.

An analytical and quantitative approach to decision-making the planning, development, implementation and control of marketing program. Prerequisite: MK 320.

MK 681 SPECIAL TOPICS IN MARKETING 3 s.h.

Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending upon the interests of instructor and students with instructor choosing specific topics. May be repeated by specific approval. Prerequisites: Permission of the instructor and Director of Graduate Studies in Business.

MK 699 INDEPENDENT STUDY IN MARKETING 1-3 s.h.

With the approval of the department, students will select one or more topics of critical importance in the field and will meet with faculty for independent reading, analysis, and evaluation. Prerequisites: Approvals of department chairperson and Director of Graduate Studies in Business.

MK 850 THESIS 1-6 s.h.

For students writing the thesis, MK 850 should be scheduled for the semester in which the student plans to complete his/her work. The thesis may be a non-committee thesis (1-3 s.h.) with one faculty member serving as the student's adviser or a committee thesis (4-6 s.h.) for which the student's adviser, two additional faculty members, Director of Graduate Studies in Business, and/or the representative of the Dean of the College of Business may constitute the committee.

CHEMISTRY

The Chemistry Department offers three different degree programs on the master's level: the Master of Education, Master of Science, and the Master of Arts degrees in chemistry.

The Master of Education program is designed for the secondary school teacher, affording the teacher the opportunity to gain more knowledge of chemistry and keep abreast of a rapidly changing field. The major emphasis is on subject matter. The student may enroll on either a full- or part-time basis.

The Master of Science degree is for the chemist who intends to pursue further graduate work leading to a PhD or who intends to work as a professional chemist and desires to become more competent in chemistry. This degree is research oriented and successful completion of an experimental thesis is required. Also two consecutive semesters of residency are required.

The Master of Arts degree is designed to meet the needs of the chemist who is currently a full-time employee of the chemical or academic institution and who wishes strengthening in those areas relevant to the professional position. The emphasis here is on course work.

Four core courses, one in each of the areas of inorganic, organic, analytical, and physical chemistry, are required in the MS and MA programs.* Beyond this point the programs separate with the MS and MA student taking more specialized work in chemistry along with an experimental research

problem. The MEd candidate will take broadening courses which increase the effectiveness of a teacher. The MA candidate will take more specialized work in chemistry and will be encouraged to take courses outside the sciences if they are relevant to the particular area of employment.

General Admissions Requirements—Students should have completed one year each of general chemistry, analytical chemistry, organic chemistry, physical chemistry, ** general physics, and calculus. Students wishing to specialize in biochemistry should also have had an undergraduate course in biochemistry. Students deficient in the above areas of study may also be admitted provided these deficiencies are made up concurrently with the student's graduate studies.

The general requirements for admission to candidacy for a master's degree are discussed on page of the bulletin.

*An exception to this is afforded the student wishing to specialize in biochemistry.

**Only one semester of physical chemistry is required for education majors.

MASTER OF ARTS IN CHEMISTRY

- I. Industrial/Teaching Experience: Before the degree of MA in chemistry can be granted the applicant must have had three years of full-time employment in an approved area of chemistry. Only those years of employment acquired after obtaining the bachelor's degree may be counted. This experience meets the University residency requirements.
- II. Course requirements include 14 hours in the following: CH 540, 600*, 610, 620, and 630.
- III. Course electives (10-16 s.h.)—Any graduate level courses selected from the natural sciences and mathematics with the permission of the candidate's adviser. Special permission from the Chemistry Department's Graduate Committee will be required for courses outside the sciences.
- IV. Thesis Requirements (zero, two, or four s.h.):
The student has three options:
 - A. Thesis not required—a total of 30 s.h. in suitable courses being acceptable.
 - B. No-Committee Thesis (CH 850-two s.h.)—Refer to page , for the steps in satisfying the research requirement for submitting a "Two-Hour, No-Committee Thesis."
 - C. Committee Thesis (CH 850-four s.h.)—If the candidate is doing research as part of the full-time employment, the research may be submitted as a thesis, provided approval is given in advance by the employer, and the Chemistry Graduate Committee. The candidate's employment supervisor may serve as an ex-officio member of the thesis committee.

*The MA candidate is not required to attend all of the day time seminars, but is required to present two seminars and is expected to attend the evening seminars.

MASTER OF EDUCATION IN CHEMISTRY

Students working for this degree will complete a minimum of 30 semester hours of work in accordance with the following division:

- I. Subject Area and/or Thesis—15-18 s.h.
 - A. Elective Chemistry Courses—11-18 s.h. of work selected from CH 500 and CH 600 level courses.
 - B. Thesis—zero-four s.h. After consultation with the adviser, the student may choose:
 1. No thesis (if the student chooses this option he/she must earn a minimum of 18 s.h. in A above.)
 2. A no-committee thesis—CH 850-two s.h.
 3. A committee thesis—CH 850-four s.h.
- II. Professional Development Area—nine s.h.
 - A. Humanistic Studies—three semester hours in one course selected from the following: FE 611, 612, 613, or 514.
 - B. Behavioral Studies—three s.h. in one course selected from the following: EP 604, 573, 576, 578, 580, CE 639, or EX 631.
 - C. Research—three s.h. required of all students GR 615.
- III. Specialization Core—six s.h.—CH 505 and one of the following courses: FE 515, CM 600, or CH 605.

For description of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE course, COUNSELOR EDUCATION; for EX course, SPECIAL EDUCATION; for CM course, COMMUNICATIONS MEDIA.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

MASTER OF SCIENCE IN CHEMISTRY

- I. Residence Requirements: The student shall be in residence a minimum of two consecutive semesters of full-time work. Students working as graduate assistants and/or making up deficiencies can expect to be in residence for at least two years.
- II. Course Requirements: For those specializing in analytical, inorganic, or physical chemistry:
 - A. Required Courses (15 s.h.): The four core courses of analytical, CH 620; inorganic, CH 610; organic, CH 630; and physical, CH 540, and one additional three hour course designated by a chemistry 600 number selected from one of the four areas of analytical, inorganic, organic, or physical chemistry.
 - B. Electives (six s.h.)

The electives may be selected from the areas of chemistry, physics, biology, and mathematics by the student with the advice and approval of the adviser.

CH 500, Special Studies, can provide a maximum of three semester hours toward the 30 semester hours necessary for the degree.

III. Course Requirements: For those specializing in biochemistry

- A. Required Courses (12 s.h.), including CH 646, 623, 630, and BI 662.
- B. Electives (at least nine s.h.), including at least one of the following: BI 561, 553, 652, 653, or 654 and any graduate courses in the natural sciences or mathematics mutually agreed upon by the student and adviser.

IV. Research and Thesis Requirements:

- A. The research work must lead to an acceptable thesis, approved by the student's adviser and supervisory committee, and defended in a final oral examination.
- B. Seminar—two s.h. required in CH 600.
- C. CH 690 for at least three hours.
- D. CH 850 Thesis—four s.h., taken during the term in which the student is writing the MS thesis.

For description of BI courses, see section on BIOLOGY.

COURSE DESCRIPTIONS

General

CH 500 SPECIAL STUDIES 1-6 s.h.

Intensive survey of literature in a particular area as well as individual instruction on recent advances in chemical instrumentation, methods of research, and specialized subject areas. To be arranged with instructor.

CH 502 CHEMISTRY IN MANUFACTURING PROCESSES 3 s.h.

A course on the applications of chemistry to manufacturing processes. Lecture and field trips. Lecture—three hours.

CH 503 GLASSBLOWING TECHNIQUES 1 s.h.

Introduces science student to techniques necessary for construction and modification of scientific glass apparatus. Two hours lecture instruction.

CH 505 NEW APPROACHES TO TEACHING
HIGH SCHOOL CHEMISTRY 3 s.h.

Chem Study and C.B.A. approaches will be investigated. Individualization of chemistry and application of various teaching materials and techniques used in individualizing chemistry. Environmental chemistry and other relevant topics to better understand the chemical basis of our current environmental problems. Four hours lecture/laboratory.

CH 576 RADIOCHEMISTRY 3 s.h.

Basic aspects of nuclear structure, phenomena of radioactive isotopes and chemical effect on such isotopes. Concurrent lab work utilizing instruments for detection and measurement of radioactive nuclides used in chemical experimentation. Four hours lecture/laboratory.

CH 600 SEMINAR 1 s.h.

A study of modern chemical research and research techniques. Scientific communication, including the role of the science laboratory in research. The student will present one oral report. Lecture—one hour.

CH 605 EXPERIMENTAL TECHNIQUES IN CHEMISTRY 3 s.h.
Experimentation, observation and application of scientific concepts. Classroom and lecture demonstrations will be prepared, presented and evaluated by students and instructor. Prerequisites: Chemistry I, II, Physics I, II. Four hours lecture/laboratory.

CH 633 CHEMICAL LITERATURE 3 s.h.
Periodicals, encyclopedias, handbooks, abstracting journals, and other sources dealing with various divisions of chemistry will be studied. Students are required to conduct a literature search on a selected topic. Lecture—three hours.

CH 690 RESEARCH 1-6 s.h.
Laboratory and literature investigation of the student's thesis problem done under the direction of a faculty member.
Within the first 15 hours of course work, the student must schedule at least one credit of research for which the student performs the literature review and writes a research proposal.

CH 699 INDEPENDENT STUDY 1-6 s.h.
Available to students who seek to deepen their knowledge in some specific aspect of chemistry. The student must discuss the nature of the independent study with a faculty member having expertise in the area prior to registration. Special attention to development of new ideas and new ways of presenting scientific principles.

CH 850 THESIS 2 or 4 s.h.
For students writing the thesis. Should be scheduled for the semester in which the student plans to complete work. May be a non-committee thesis (2 s.h.) with one faculty member serving as adviser; or a committee thesis (4 s.h.), for which the student's adviser, two additional faculty members and the Dean of the College of Natural Sciences and Mathematics constitute the committee.

Inorganic

CH 512 INORGANIC PREPARATIONS 3 s.h.
Preparation of inorganic compounds expressing different techniques of synthesis. Designed for those students who have chosen to do inorganic research but have never had a prep course. Four hours lecture-laboratory.

CH 610 INORGANIC CHEMISTRY (core course) 3 s.h.
Theoretical inorganic chemistry and in particular, structure, periodicity, coordination chemistry, bonding and chemistry of non-aqueous solvents. Lecture—three hours.

CH 611 COORDINATION CHEMISTRY 3 s.h.
Chemistry of transition metals, their compounds and complex ions. Lecture—three hours.

CH 615 CURRENT TOPICS IN INORGANIC CHEMISTRY 3 s.h.
Representative elements, chemistry of rare earth elements, inorganic spectroscopy, group theory or any other special areas of chemical interest.

Analytical

CH 521 ADVANCED INSTRUMENTAL METHODS OF ANALYSIS 3 s.h.
Modern instrumental analysis including electrical, spectrophotometric, x-ray, gas chromatography, and other methods. (Open to MS and MA candidates by permission only.) Four hours of lecture-laboratory.

CH 620 ANALYTICAL CHEMISTRY (core course) 3 s.h.
Theoretical principles of analytical chemistry. Lecture—three hours.

CH 621 ELECTROANALYTICAL CHEMISTRY 3 s.h.

Theoretical and practical considerations of polarography, potentiometric, amperometric, coulometric, and conductometric methods of chemical analysis. Lecture—two hours—four-hour lab.

CH 622 SPECTROCHEMICAL METHODS OF ANALYSIS 3 s.h.

Study of instrumentation and analytical applications of ultraviolet and visible absorption, atomic spectrometry, fluorescence, x-spectrometry, and nuclear magnetic resonance. Lecture—two hours—four-hour labs.

CH 623 PHYSICAL AND CHEMICAL METHODS OF SEPARATION 3 s.h.

Application of chromatographic methods to the quantitative separation and analysis of chemical systems. Topics will include gas, column, paper and ion exchange chromatographic methods and other methods of separation as time permits. Lecture—two hours—four-hour lab.

Organic

CH 531 ORGANIC QUALITATIVE ANALYSIS 3 s.h.

Gives student experience in systematic identification of various classes of organic compounds by both chemical and physical methods. Four hours lecture-laboratory.

CH 535 CURRENT TOPICS IN ORGANIC CHEMISTRY 3 s.h.

With selections to meet the needs and interests of the students, possible topics may include: reaction mechanisms, molecular spectroscopy, stereochemistry, natural products, heterocyclics, polymer chemistry, and organic synthesis.

CH 630 ORGANIC CHEMISTRY (core course) 3 s.h.

Principles of physical chemistry will be applied to the study of organic reaction mechanisms. Lecture—three hours.

Physical Chemistry

CH 540 PHYSICAL CHEMISTRY (core course) 3 s.h.

An introduction to chemical bonding and molecular structure. Lecture—three hours.

CH 641 STATISTICAL THERMODYNAMICS 3 s.h.

The application of statistical mechanics to chemical systems. Lecture—three hours.

CH 642 CHEMICAL KINETICS 3 s.h.

An introduction to empirical and theoretical chemical kinetics. Lecture—three hours.

CH 643 QUANTUM CHEMISTRY 3 s.h.

An introduction to quantum theory and its application to atomic and molecular structure and spectroscopy. Lecture—three hours.

CH 645 CURRENT TOPICS IN PHYSICAL CHEMISTRY 3 s.h.

With selection to meet the needs and interests of the student, possible topics may include: quantum mechanics, molecular structure, chemical thermodynamics, statistical mechanics and chemical kinetics.

Biochemistry

CH 646 BIOCHEMISTRY 3 s.h.

Topics covering and emphasizing most recent developments in the areas of biochemistry such as amino acids, carbohydrates, lipids, nucleic acids, proteins, enzymes, metabolism and metabolic control. Lecture—three hours.

CH 651 BIOCHEMISTRY TOPICS 3 s.h.
A discussion of areas such as carbohydrates, lipids, amino acids, proteins, nucleic acids, kinetics, and metabolism. Lecture—three hours.

CH 652 ENZYMES 3 s.h.
A study of enzymes to include isolation, kinetics, classification, specificity, mechanisms, cofactors, structure and formation. Lecture—three hours.

COMMUNICATIONS MEDIA

In the Communications Media Department, the student may choose from these programs:

Master of Education in Communications Media
Instructional Media Specialist Certification

Students pursuing careers in educational communications, business or industrial training as well as medical communications have the opportunity to choose a course of study that most effectively prepares them for entry into that profession. The department's modern facilities and professional staff provide students the opportunity to do intensive work in photography, graphic production, radio, television, instructional design and development, media management or such combinations of these areas as students may desire to accomplish their goals. In many of these courses, students gain experience in the design, production and evaluation of training, promotional and educational materials. The culmination of the academic experience is an optional internship in which students have the opportunity to apply theory to practice.

Students are encouraged to consult their advisor and course instructors at frequent intervals, especially during the schedule planning stage prior to preregistration. For current curriculum information, students should contact the Department Graduate Coordinator.

All departmental offerings are distributed within the following course concentration Blocks. The Blocks serve only as guides for choosing those courses that are consistent with the student's goals. Students may elect courses from all three Blocks or may choose to concentrate on only one. These Blocks apply to both the Master of Education and the Instructional Media Specialist programs.

BLOCK I MEDIA MANAGEMENT
CM 630, CM 660, CM 669, CM 699, EA 656, MG 630, MG 642, MK 600

BLOCK II MEDIA PRODUCTION
CM 504, CM 505, CM 540, CM 544, CM 545, CM 549, CM 550, CM 551, CM 552, CM 561, CM 571, CM 572, CM 573, CM 577, CM 578, CM 615, CM 630, CM 660, CM 669, CM 699

BLOCK III INSTRUCTIONAL DEVELOPMENT
CM 561, CM 615, CM 669, CM 699, CO 502, EL 631, EL 655, FE 515, GR 516

MASTER OF EDUCATION IN COMMUNICATIONS MEDIA

Admission Requirements

(Subject to some modification by departmental vote in individual cases of merit)

1. A 2.5 (4 point scale) undergraduate GPA
2. Passing the Graduate Record Aptitude Examination. An average of 470 on the verbal and math tests is required.

Students from other Graduate schools and Programs may transfer up to six semester hours of credit subject to the approval of the department and the Graduate school. Apply through your advisor, providing him or her with a copy of your graduate transcript and full course description. Only courses which parallel IUP courses will be accepted.

To enter the Indiana University of Pennsylvania Graduate School, prospective students should request an application from:

Dean, Graduate School
Indiana University of Pennsylvania
101 Stright Hall
Indiana, PA 15705

By completing an application and by providing the appropriate transcripts, letters of recommendation, etc., you will be considered for admission to graduate study at Indiana University of Pennsylvania in the area of Communications Media. If you are accepted into the program, the Department of Communications Media will notify you of your advisor's name. You should contact him or her immediately for the purpose of designing your program of studies.

While some basic media competencies as might be obtained in audiovisual courses are preferred of all applicants, such experience is not a requirement for acceptance into the program. Where lacking, these competencies will be built into the student's program of study. Other than the indicated required courses, students, in consultation with their advisor, will elect the additional courses needed to complete their individual program.

Admission to Candidacy

After completion of at least six semester hours and before 12 semester hours, the applicant will make formal application to the Graduate School and to the departmental graduate committee for admission to candidacy for a Master of Education in Communications Media. The candidate must have at least a B average in graduate courses taken at Indiana, including the behavioral studies elective, and have taken at least two courses from the Communications Media Curriculum. He/she may then be asked to appear before the departmental Graduate Committee.

When applying for admission to candidacy, the student must declare the terminal option he or she will follow to complete the degree. See Thesis/Non-Thesis option below.

Master of Education in Media Program

- A. Professional Development Area (nine s.h.)
 - 1. Humanistic Studies (three s.h.); one of FE 514, 611, 612, 613
 - 2. Behavioral Studies (three s.h.); one of EP 572, 573, 576, 578, 604, or CE 629, CE 639, EX 631, or PC 636
 - 3. Research (three s.h.); GR 615
- B. Specialization Core (three s.h.); CM 503
- C. Subject Area
 - 1. Student elected concentrations from Blocks I, II, III. Dependent upon terminal option selected (see above), students will take 12-18 s.h. media courses specializing in one Block, or a variety of courses from Block I: Media Management, Block II: Media Production, or Block III: Instructional Development
 - 2. Thesis/Non-Thesis Option
 - a. Thesis—30 s.h. including thesis
 - b. Coursework—36 s.h. total

(For description of FE courses, see the Graduate Catalogue section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX courses, SPECIAL EDUCATION; for PC courses, PSYCHOLOGY; for description of GR courses, see entry under GENERAL SERVICE COURSES.)

Certification as an Instructional Media Specialist

The specialist certificate in Instructional Media may be awarded to students who hold at least a Pennsylvania Level 1 or equivalent certificate valid for elementary or secondary education and who complete 24 semester hours of graduate work in the curriculum of Communications Media and related subjects. With the approval of an advisor, each student will select a balance of courses from the three concentration Blocks described earlier; however, CM 503, 615, 630, and 660 must be included in the courses selected. Application for the certificate is made through the Communications Media Department to the Pennsylvania Department of Public Instruction.

By careful structuring of their program, it is possible for students to obtain both the MEd degree and the Instructional Media Specialist Certification concurrently. Usually this will require slightly more than the 30 semester hours of minimum credits required for the MEd but students often find it to their advantage to fulfill the requirements for both programs.

Students not in the educational profession (i.e., Business or Industry) and who otherwise meet the admission requirements of the Graduate School may pursue the program for Instructional Media Specialist and upon completion of the requirements may be granted a special Certificate of Proficiency in Instructional Media by the University.

Graduate School admission does not automatically ensure acceptance into the certificate program. Successful applicants will present evidence of (1) the intellectual ability to do acceptable graduate work; (2) satisfactory scores on the GRE; and (3) the requisite personal qualifications of character, health, and professional background. The departmental graduate faculty will make the necessary determinations.

Placement

Early in the final semester of work, the student is encouraged to register with the Career Services Division of the University in Pratt Hall, Room 302.

In addition, the Department of Communications Media makes every effort to keep a current listing of job vacancies in business, industry, education and medical communications. Consult your advisor or the department chairperson frequently. Vacancies are also regularly posted on the bulletin board outside Stouffer Hall G-16.

COURSE DESCRIPTIONS

CM 503 SCRIPTWRITING 3 s.h.

Provides an introduction to scriptwriting for films and filmstrips. Various styles and techniques of writing will be analyzed and each student will be expected to experiment with the techniques presented. Emphasis on writing and criticism, in class, of student script.

CM 504 FOUNDATIONS OF BROADCASTING 3 s.h.

An examination of the historical, legal, and economic aspects of modern broadcasting. Extensive readings in fundamental theory and a study of current station and network practices, educational as well as commercial.

CM 505 RADIO PRODUCTION 3 s.h.

Instruction in the various techniques and applications of sound production and programming for radio. Emphasis on planning, scripting and producing broadcast quality radio programs as well as commercial type announcements and station promotional devices.

CM 540 COMMUNICATIONS GRAPHICS 3 s.h.

Provides basic experiences in planning and producing commonly used television studio, industrial display and classroom graphics which are applicable in educational, industrial and medical training programs. Experiences include layout and lettering; color; mounting and laminating techniques; copying techniques such as Thermofax, photography and Xerography; photo silk screening and photo sketching.

CM 544 APPLICATIONS AND TECHNIQUES OF MOTION PICTURES 3 s.h.

Emphasis on effective use of motion picture camera and editing tools to make useful, locally produced teaching films. No previous experience is necessary, but student should own or have access to an 8mm or 16mm camera, and an acceptable exposure meter.

CM 545 APPLICATIONS AND TECHNIQUES OF MOTION PICTURES 3 s.h.

Production planning for motion pictures, directing, advanced picture and sound editing techniques, and use of sound recording and lab facilities. In addition to live action cinematography, titling, animation, and special effects photography will be investigated. CM 544.

CM 549 BASIC AUDIO RECORDING 3 s.h.

Theory and practices of recording sound, developing an understanding of language of sound recording as well as ability to make sound recordings. Exposure to recording for various media including radio, music, motion pictures, television, multi-image, and slide and tape production. Students will gain hands-on experiences through labs and projects to be completed outside class.

CM 550 ADVANCED AUDIO PRODUCTION 3 s.h.

Theory and practice of recording sound for motion pictures, video tapes, audio tapes, sound filmstrips, etc. Will use sound on sound and other special techniques.

CM 551 BASIC TV PRODUCTION AND DIRECTION 3 s.h.

Intensive lab course using closed circuit facilities designed to develop skills in program production and direction. Theory and practice of production is examined with each student expected to produce a television program during the course.

CM 552 ELECTRONIC FIELD PRODUCTION 3 s.h.

For advanced graduate student with prior training and experience in television. Advanced television production techniques, set design, lighting, special effects, and advanced editing techniques. CM 551

CM 561 LEARNING SYSTEMS DESIGN 3 s.h.

Introduction to elements of systems approach to learning systems design. For people involved in any level of instruction such as teachers, industrial, government, and social trainers. Participants will have the opportunity to study and carefully plan a learning system according to accepted phases of analysis, design, and evaluation.

CM 571 BEGINNING PHOTOGRAPHY 3 s.h.

Emphasis on using still picture camera and the darkroom for instructional purposes, the making of b/w negatives, 35mm slides, copywork, developing b/w film, and b/w contact printing and enlarging. Each student must have manual focusing and manual exposure setting capability. No previous photographic experience is necessary.

CM 572 PHOTOGRAPHY II 3 s.h.

Helps students develop their camera and printmaking skills to the extent that they can employ those processes to communicate an intended message with their photographs. The students explore the characteristics and uses of a variety of films. They learn several skills such as copywork, basic techniques of portrait lighting, and altering film development to suit high- or low-contrast subjects. CM 571 and permission of instructor.

CM 573 CREATIVE DARKROOM TECHNIQUES 3 s.h.

Introduces the student to a variety of photographic manipulations. Specific assignments are chosen from such techniques as high-contrast imagery, tone line, bas-relief, posterization; texturization, paper negatives, hand coloring, multiple printing, photomontage. CM 571 and permission of the instructor.

CM 577 SLIDE AND SOUND PRODUCTION 3 s.h.

Emphasizes techniques of color and b/w slide preparation, duplication, titling and binding; techniques necessary to produce color filmstrips on a commercial basis, and students will participate in making of a filmstrip through all stages, from script to screen. Techniques for making home-made filmstrips will also be explored. Each student must furnish own 35mm camera, and an acceptable exposure meter. CM 571

CM 578 MULTI-IMAGE PRODUCTION 3 s.h.

Introduction to scripting, storyboarding and production of multi-image presentations. Major emphasis on students producing their own three-screen, six projector program through the use of computer programming equipment. CM 571, 503.

CM 600 SEMINAR IN LEARNING RESOURCES 3 s.h.

Major emphasis on differences in learning materials, learning and teaching methods. The student will do literary research for a better understanding of how learning resources are related to learning processes in our society.

CM 601 THE CLASSROOM USE OF MOTION PICTURES 3 s.h.

Develops a basis for critical evaluation of films for various educational purposes. Emphasis on an understanding of production techniques, stereotypes, prejudices, and misconceptions which influence the quality of educational films.

CM 602 PROGRAMMING SYSTEMATIC INSTRUCTION 3 s.h.

Will cover historical development theory and philosophy, audio instructional equipment, programmed texts, theories of programming, types of programs available, analysis and evaluation of research.

CM 615 ROLE OF LEARNING RESOURCES 3 s.h.

Examines role of perception as it pertains to sensory experiences and inner cognitive processes in relationship to maturation, goals and drives, and environment. Seeks to relate psychological processes to learning resources, with emphasis on newer media.

CM 630 CLASSIFICATION AND CATALOGING OF LEARNING RESOURCES 3 s.h.

Principles of classifying and cataloging learning resources such as motion pictures, video tapes, filmstrips, slides, transparencies, disk and tape recordings, microfilm, microcard and microfiche, flat pictures, etc. For learning resources administrators and librarians.

CM 660 MEDIA MANAGEMENT 3 s.h.

Considers the problems in setting up and managing an integrated program, including production, selection, utilization, and management of Learning Resources Centers; and problems of finance and organization of the different services; relationships among school systems, colleges and community and adult groups; and evaluation standards for various services.

CM 669 INTERNSHIP 2-6 s.h.

Supervised professional work experience in communications media. Location, duties, length of internship and hours are individually tailored to student career goals. Sites represent wide application of process and technology of communications in business, education, allied health, or other agencies.

CM 699 GRADUATE INDEPENDENT STUDY 1-3 s.h.

The student may elect, with approval of adviser, to do several different independent study projects. University facilities and equipment are provided but student must supply materials and pay for processing and production costs. Prerequisite: Successful completion of the basic course in the medium selected, the professor's approval.

COMPUTER SCIENCE

The Computer Science Department does not currently offer a program leading to a master's or doctoral degree. Graduate courses are offered as dual level with undergraduate courses.

COURSE DESCRIPTIONS

CO 502 COMPUTERS IN EDUCATION 3 s.h.

Introduction to computers and computer programming in the language BASIC, with emphasis on applications in education; general models for computer usage in education, and educational institutions, case studies of specific project in terms of approach, effectiveness, and implications for the future. No computer prerequisites.

CO 510 PROCESSOR ARCHITECTURE AND MICROPROGRAMMING 3 s.h.

The logical description of computer processor structure (architecture), with emphasis on the microprogramming approach. Project assignments using the Microdata 1600 minicomputer at microlevel. Prerequisite: Permission of the instructor.

CO 520 MODERN COMPUTER LANGUAGES 3 s.h.

Comparative study of the properties and applications of a range of modern higher level programming languages, including APL, SNOBOL, PL/1, ALGOL 60, PASCAL, LISP, and TRAC. Comparison with older languages such as BASIC, FORTRAN, COBOL, and RPG. Prerequisite: Permission of the instructor.

CO 530 INTRODUCTION TO SYSTEMS PROGRAMMING 3 s.h.

Concepts and techniques of systems programming with an emphasis on assembly and compilation of user programs. Representation of source language so as to facilitate the needed translation process. Exercises using the University computer and the departmental minicomputer and microcomputer. Prerequisite: Permission of the instructor.

CO 540 LARGE FILE ORGANIZATION AND ACCESS 3 s.h.

The organization of large computer files for business systems, information systems, and other applications. Use of COBOL and Assembler for efficient file access. Evaluation of file access. Prerequisite: Permission of the instructor.

CO 541 DATA BASE MANAGEMENT 3 s.h.

Review of data base concepts. Detailed study of data base management approaches. Comparative presentation of commercially available data base management systems. Prerequisite: Permission of the instructor.

CO 550 APPLIED NUMERICAL METHODS 3 s.h.

Polynomial approximations using finite differences; applications in numerical integration and differentiation. Numerical solution of initial value ordinary differential equations; boundary value problems; difference methods for partial differential equations. The APL language will be introduced and used, along with FORTRAN, in programming selected algorithms. Prerequisites: Computer Programming, Linear Algebra, and Ordinary Differential Equations.

CO 551 NUMERICAL ANALYSIS 3 s.h.

Theory of polynomial approximation; applications to quadrature formulae. Numerical solution of linear systems and computation of eigenvalues and eigenvectors using matrix transformation methods. Selected topics from differential equations, linear programming, rational approximations, and Monte Carlo techniques. Prerequisite: CO 550.

CO 560 THEORY OF COMPUTATION 3 s.h.

Formal methods for describing and analyzing programming languages and algorithms; Backus-Naur forms; productions; regular expressions; introduction to automata theory; Turing machines; recent concepts in algorithm theory. Prerequisite: Permission of the instructor.

CO 581 SPECIAL TOPICS IN COMPUTER SCIENCE 3 s.h.

Seminar in advanced topics from Computer Science; content will vary depending on the interests of the instructor and students (consult department for currently planned topics). May be repeated for additional credit. Prerequisite: Permission of the instructor.

CO 601 FUNDAMENTALS OF COMPUTER PROGRAMMING 3 s.h.

Introduction to digital computer programming. Development of problem solving skills using flowcharting and a problem oriented language, such as FORTRAN. Four to five programs required. Description of a large problem from students field of interest for possible computer solution. No prerequisite.

CONSUMER SERVICES

Graduate courses in Consumer Services are primarily designed to provide in-depth study in particular areas of home economics. A graduate degree in Consumer Services is pending. Credits in these courses may be used towards a degree in Home Economics Education.

COURSE DESCRIPTIONS

CS 533 CONSUMER SERVICES STUDY TOUR 1-6 s.h.

Offered to broaden the scope of experience and understanding of fashion in clothing, textiles, and interior design. Historic costumes, textiles, and decorative arts are viewed. Fashion houses, designer salons, cottage industry centers, retail stores and museums are visited.

CS 534 QUALITY CONTROL IN TEXTILES 3 s.h.

Physical properties explored through microscopic examination and use of textile testing equipment for fabric analysis. Prerequisite: CS 314 Textiles, or equivalent. Two lecture hours, two laboratory hours.

CS 553 FLAT PATTERN DESIGN 3 s.h.

Garment design achieved by use of flat pattern techniques. An understanding is developed for the interrelationships of garment design, fabric, fit, and construction processes. Two major projects required. One hour lecture, three hours laboratory.

CS 554 TAILORING 3 s.h.

Various tailoring methods are studied and applied in the selection, fitting, and construction of a tailored garment. Consumer problems in the selection of ready-to-wear apparel are investigated. A research study or project is required. One hour lecture, three hour laboratory.

CS 555 DRAPING 3 s.h.

In-depth study of the principles involved in fashion design, draping principles, and the manipulation of fabric to conform to the human figure. Students will pad a form to individual measurements and design garments that are both individual and original. Two major projects required. One hour lecture, three hours laboratory.

CS 556 HISTORIC COSTUME 3 s.h.

Chronological study of historic costume from ancient times to the present day, emphasizing style details as well as social, economic, political, religious, and aesthetic influences on design of clothing. Three lecture hours.

CS 561 MICROWAVE COOKING TECHNOLOGY 3 s.h.

Study of the electronic technology, selection, care and use of the microwave oven. Basic physical and chemical concepts related to microwave cooking will be included. Individual investigative research problems will be required. Two lecture hours plus two lab hours per week.

CS 562 HISTORIC INTERIORS 3 s.h.

Chronological study from ancient times to the mid-19th Century of the dominant influences and characteristics of historical interiors, furniture and ornamental design. Emphasis placed upon style detail and its relationship to social, economic, political, religious and aesthetic influence, and to the contemporary scene. Paper required. Three lecture hours.

CS 563 MODERN INTERIORS 3 s.h.

Chronological study from mid-19th Century to the present of the dominant influences and characteristics of 20th Century interiors, furniture and ornamental design. Emphasis placed upon style detail and its relationship to social, economic, political, religious and aesthetic influence, and to the contemporary scene. Paper required. Three lecture hours.

CS 564 INTERIOR PLANNING AND DRAWING 3 s.h.

Lifespace analysis and design as related to residential applications. Presentation, appropriate media, equipment and techniques will be stressed. Freehand and mechanical methods employed to depict floor plans, elevations and construction details. A research project related to professional interests is required. One hour lecture, three hours lab per week.

CS 630 CLOTHING AND HUMAN BEHAVIOR 3 s.h.

Understanding factors affecting clothing decisions of differing individuals and families. Cultural, social psychological and economic influences are considered. Concepts from anthropology, sociology, psychology and economics are explored in studying the relation of clothing to human behavior.

CS 631 CREATIVE CLOTHING 3 s.h.

Factors that influence clothing design and sources of design inspiration are investigated. Lines, shapes, colors, and textures are studied in the creation of clothing to fit the human body. Effects of fabric finishes, drapability, and dimensional stability on design are explored. Two major projects required.

CS 632 RECENT DEVELOPMENTS IN TEXTILES 3 s.h.

Designed to acquaint the student with the new developments in textiles as they affect the consumer. Emphasis on understanding factors involved in selection, use and care of new fibers, fabrics and finishes.

CS 650 HUMAN RESOURCE MANAGEMENT 3 s.h.

Principles of management are studied in-depth as they encompass conditions of the household or family. A systems approach is used to analyze the components and functions of home management. Management of resources is emphasized to improve day-to-day living of families and individuals with different lifestyles. Individual research on pertinent topics is required.

CS 655 CONSUMER ECONOMICS 3 s.h.

Problems dealing with industry, government regulations and consumer relationships with emphasis given to effects of current economic and social forces. Individual investigations are required.

CS 656 PROBLEMS IN FAMILY FINANCE 3 s.h.

Advanced problems in personal and family finance. Individual investigations in current situations are required.

CS 661 CONSUMER ELECTRONICS 3 s.h.

In-depth study of household equipment in relation to energy and its distribution and consumption throughout the network systems of the house. Individual problems required.

CS 662 PROBLEMS IN HOUSING 3 s.h.

Private and public housing problems posed by an urbanizing society and approaches to their solution are studied. Social, economic, physical and psychological factors are explored. Three hours lecture.

CS 663 PROBLEMS IN INTERIOR DESIGN

3 s.h.

Advanced work in the design, selection and arrangement of furnishings for residential interiors are studied in relation to the fulfillment of human needs and the application to interior design problems.

CS 664 LIVING ENVIRONMENTS FOR OLDER ADULTS

3 s.h.

Social, psychological, physical, and economic concerns of the older adult are considered in relation to housing alternatives. Selected legislation and current programs are investigated, evaluated and compared to proposals for a more livable and satisfying near environment.

COUNSELOR EDUCATION

Department offerings include Master of Arts, Master of Education and Doctor of Education degree programs. Commonwealth approved programs leading to certification as elementary school counselor, secondary school counselor, supervisor of guidance services, and supervisor of pupil personnel services are also available.

Degree Programs

MASTER OF ARTS IN ADULT AND COMMUNITY EDUCATION

The Master of Arts in the Adult and Community Education (ACE) Program is a leadership training program which prepares students for work in educational settings in communities; schools; business and industry; and social, health, and recreational agencies. It is designed to accommodate qualified professionals from a wide variety of backgrounds who seek knowledge and skills to work with adults in traditional as well as non-traditional educational situations.

The ACE Program addresses the needs of the changing times and changing student population by providing a flexible yet intensive curriculum with a broad based approach to contemporary learning. The program offers a proportionate balance of practical field experience, academic training, and individual research.

A minimum of 36 hours is required for the degree. These include 24 credits which may be individualized to allow students to pursue an area of special interest. Required courses are AC 620, AC 621, AC 622, AC 623, AC 625, AC 635, AC 640, GR 615, and GR 650 or AC 645. Students are also required to take six hours in electives. The thesis is optional; AC 645 may be taken in its place.

MASTER OF ARTS IN COUNSELING SERVICES

The Master of Arts degree program in Counseling Services is designed for students seeking preparation leading to counseling and counseling-related employment in community and business settings. Student programs are individually designed to prepare them to work in any of a number of settings, including mental health centers, specialized community agencies, vocational or rehabilitation programs, correctional institutions, health care settings, social services, and business and industry.

Students enrolled in the Master of Arts degree program will complete 36 (includes thesis) or 39 (without thesis) hours of credit for the degree. The program requires the following courses or their equivalents: CE 620, CE

633, CE 635, CE 637, CE 639, CE 641, GR 516 and GR 615. Students are also required to take from nine to twelve hours in supporting electives.

MASTER OF ARTS IN STUDENT PERSONNEL SERVICES

Professional preparation in this program is designed for students who plan to seek employment in student affairs in higher education. All students are required to complete an internship in their potential area of employment. Students in the program complete 33 credit hours for the degree. The following courses or their equivalents are required: CE 633, CE 637, CE 641, GR 516, GR 615, ST 626, ST 627, ST 628, ST 629, and ST 630. Students must take a minimum of three credit hours in electives.

MASTER OF EDUCATION

Students seeking the Master of Education degree who do not plan to obtain Commonwealth certification as a school counselor must complete thirty-three credit hours for the degree. The following courses are required: CE 629 or CE 639; CE 631; CE 633; FE 611, 612, or 613; GR 516 and GR 615. In addition to the required courses, students must take fifteen additional credit hours. Twelve of these credit hours must carry an AC, CE, or ST prefix. Courses are selected on the basis of the student's personal needs and vocational goals.

Certification Programs

Elementary and Secondary School Counselors—To qualify for institutional endorsement and Commonwealth certification the student must complete a forty-five credit hour competency-based program to include field experience and all requirements for the Master of Education degree.

While teaching experience is not a prerequisite for admission, students should have or obtain an understanding of educational philosophy, objectives, and practices. They should also understand the basic principles of psychology, sociology, and related fields; and possess sufficient background in mathematics to comprehend the statistical concepts and methods with which the counselor must be familiar.

All students will take the following courses or their equivalents: CE 631; CE 633; CE 638; CE 655; FE 611, 612, or 613; GR 516; and GR 615.

Students seeking Commonwealth certification as elementary school counselors will also complete CE 625, CE 626, CE 627, CE 629, CE 640 plus a minimum of six credit hours in supporting electives.

In addition to the courses outlined above, students seeking Commonwealth certification as secondary school counselors will take CE 635, CE 636, CE 637, and CE 639, CE 641 plus six credit hours in supporting electives.

Supervisor of Guidance Services and Supervisor of Pupil Personnel Services—These two areas of study are six year, competency-based, management-oriented programs. They are designed for the preparation and certification of guidance services supervisors or pupil personnel services supervisors in grades K-12. Applicants for both certificates must have suitable academic credentials to include the master's degree. The supervisor of guidance services applicant must have at least one year of experience as a school counselor. The supervisor of pupil personnel services applicant must have at least one year of experience as a pupil personnel specialist.

Students in both certificate programs will take the following core courses or their equivalents: CE 630, CE 643, CE 644, CE 645, CE 646, CE 647, CE 651, CE 660, CO 502, FE 515, MG 630.

Students in the Supervisor of Guidance Services program will also take CE 650.

Students in the Supervisor of Pupil Personnel Services program will take CE 649 in addition to the core courses.

Both certificate programs require the completion of a minimum of forty-eight credit hours which includes a twelve-hour internship.

DOCTOR OF EDUCATION

The degree program is specifically designed to meet the needs of human service specialists who desire to become supervisors of human services and for those supervisors who desire to refine and upgrade their competencies. Students may choose from doctoral program concentrations that lead to the development of competencies needed to function in one of the following areas: supervisor of guidance services, supervisor of pupil personnel services, supervisor of student personnel services in higher education, supervisor of human services in government or business, or a teacher in higher education.

Sixty-nine credit hours beyond the master's degree is required. Students are required to take the following courses or their equivalents: CE 630, CE 643, CE 644, CE 645, CE 646, CE 648, CE 650, CE 651, CO 601, GR 517 and MG 630. Students are also required to complete a twelve-hour minor, a twelve-hour internship, and a twelve-hour dissertation.

Course descriptions for required courses outside the Department may be found in the following areas: CO courses, see COMPUTER SCIENCE; FE courses, see FOUNDATIONS OF EDUCATION; GR courses, GENERAL SERVICE COURSES; and MG courses, see BUSINESS MANAGEMENT.

COURSE DESCRIPTIONS

AC 620 INTRODUCTION TO ADULT AND COMMUNITY EDUCATION 3 s.h.

A survey course which examines the fields of Adult and Community Education philosophically and historically and in terms of current programs and processes. The course includes the study of Adult and Community Education principles and concept as well as available literature and resources.

AC 621 THE ADULT LEARNER 3 s.h.

This course focuses on the adult as a learner—his physiological, psychological, sociological, and intellectual characteristics and how they affect learning.

AC 622 PROGRAM AND PROCESS DEVELOPMENT IN ADULT AND COMMUNITY EDUCATION 3 s.h.

A knowledge and skill-building course designed for present and future Adult and Community Education practitioners. This how-to-course will examine concepts and practices relevant to program development in traditional and non-traditional educational settings.

**AC 623 ORGANIZATION AND ADMINISTRATION
IN ADULT AND COMMUNITY EDUCATION 3 s.h.**

This course introduces the student to basic theories of educational administration and management and organizational structure. It includes a study of and application of the tasks, tools, strategies and leadership role of the adult and community education administrator. Prerequisites: AC 620, 622.

**AC 625 TEACHING AND LEARNING IN
ADULT AND COMMUNITY EDUCATION 3 s.h.**

This course examines: teaching-learning theories as they relate to adults; the teaching-learning process in a variety of educational learning settings; instructional methods, techniques and devices which are effective with adults; and instructional designs and evaluative methods effective in the teaching-learning process. Prerequisite: AC 621 and permission.

AC 635 SEMINAR IN ADULT AND COMMUNITY EDUCATION 3 s.h.

This course has a research emphasis. It involves an intensive study of special topics in Adult and Community Education. Research content varies according to student interest. Prerequisites: 12 credits in Adult and Community Education.

AC 640 INTERNSHIP IN ADULT AND COMMUNITY EDUCATION 6 s.h.

This is an individually designed field project where students work with a site project advisor and an university advisor. The 6 credit Internship is a single project designed in two phases, each earning 3 credits. Prerequisite: Advisor Approval.

**AC 645 PRACTICAL RESEARCH IN
ADULT AND COMMUNITY EDUCATION 3 s.h.**

Practical research in Adult and Community Education is designed to have students conduct and report a formal research study in their field of interest. Students are to formulate a research problem and design a plan of inquiry that will provide an answer(s) to their stated research problem. Students must be able to interpret their research findings and communicate them both orally and in writing at a professional level. Prerequisite: Advisor Approval.

CE 620 COMMUNITY COUNSELING 3 s.h.

Provides an introduction to the work of the community counselor in a variety of roles in many different settings.

CE 625 INDIVIDUAL ANALYSIS (CHILDREN UNDER 12) 3 s.h.

Principles, problems, methods, and content involved in understanding the child and his/her developing self-concept.

CE 626 CAREER EDUCATION 3 s.h.

Study of how education and the community help all individuals become familiar with the values of a work-oriented society and the integration of these values into their personal value structure.

CE 627 CONSULTATIVE AND COUNSELING THEORY 3 s.h.

Theories, objectives, principles and practices of consulting and counseling with individuals and groups are covered. Emphasis is placed on techniques and practices related to children.

CE 629 GROUP PROCEDURES 3 s.h.

Emphasis is placed upon understanding and developing group techniques related to the development and growth of children.

- CE 630 PROFESSIONAL, ETHICAL, AND LEGAL CONSIDERATIONS 3 s.h.**
 Emphasis is placed on legal and ethical issues associated with the human services. It analyzes the function of ethics in the profession and study of the legal rights, duties, and liabilities of human service practitioners.
- CE 631 INTRODUCTION TO GUIDANCE SERVICES 3 s.h.**
 Overview of genesis and development of guidance in American education, including philosophical concepts, psychological theories, cultural and social influences, and current practices.
- CE 633 EVALUATION TECHNIQUES 3 s.h.**
 Basic concepts utilized in testing, emphasizing data concerning purposes and types of tests, test administration, test scoring, test validity and reliability, and test selection.
- CE 635 INDIVIDUAL ANALYSIS 3 s.h.**
 Principles, problems, methods, and content involved in understanding the adolescent and adult and their developing self-concepts.
- CE 636 CAREER DEVELOPMENT 3 s.h.**
 Emphasizes how individuals acquire knowledge, understanding, skills, abilities, attitudes, and values which will lead to effective career behaviors. Considers career education, vocational development theories, decision-making skills, and the processing and use of information.
- CE 637 COUNSELING AND CONSULTATIVE THEORY 3 s.h.**
 Theories, objectives, principles and practices of counseling and consulting with individuals are covered. Counseling skills and interviewing techniques are presented and practiced to prepare the student for the practicum experience.
- CE 638 MANAGEMENT OF THE GUIDANCE SERVICES 3 s.h.**
 Helps the school counselor acquire necessary competencies to manage guidance services. Emphasis placed upon planning, organizing, actuating, and controlling functions of management as applied to the guidance services. Prerequisites: CE 631, 633, 636, 637 and 639 or their equivalents.
- CE 639 GROUP PROCEDURES 3 s.h.**
 Emphasis will be placed upon the nature of groups, techniques involved in the development of group dynamics, formation and operation of groups, organization and structure of groups, and the influence of the group.
- CE 640 SUPERVISED PRACTICUM 3 s.h.**
 Practice in developing and using individual and group techniques for those who work with children. Observing, interviewing, and consulting procedures will be developed. Prerequisite: CE 627.
- CE 641 SUPERVISED PRACTICUM 3 s.h.**
 Practicum experience in counseling and consulting techniques, including interviews, observations, written reports, and group interaction. Techniques for working with adolescents and adults are emphasized. Emphasis is placed on the development of effective interpersonal relationship skills. Prerequisite: CE 637.
- CE 642 SCHOOL SERVICES 3 s.h.**
 Examines how the educational philosophies and objectives of elementary and secondary schools are related to the development of the philosophy and objectives of the school services—instructional, management, and pupil.

CE 643 PLANNING HUMAN SERVICES 3 s.h.

Students will critically analyze the written philosophies and objectives of the human service field in which they plan to practice. Students will develop plans based on the philosophy and objectives of the organization that include personnel, facilities, materials, and money.

CE 644 ORGANIZING HUMAN SERVICES 3 s.h.

Students will identify tasks necessary to execute the plans which will fulfill the objectives of the organization. Personnel qualified to perform the tasks will be identified. Techniques to relate tasks to personnel will be examined and appropriate organizational patterns developed. Prerequisite: CE 643.

CE 645 HUMAN RELATIONS AND COMMUNICATIONS 3 s.h.

Emphasis will be placed on the development of human relations and communication skills in human service organizations. Human relations principles and techniques to elicit cooperation from personnel and skills in communicating with personnel participating in the organization will be developed.

CE 646 INTERPERSONAL SENSITIVITY 3 s.h.

Participants will explore their interpersonal interaction style in groups and individually. Human potential of the students will be developed as they enter into authentic, honest and trusting relationships within the context of a small group experience encouraging an examination and understanding of one's self and one's impact on others.

CE 647 PUPIL SERVICES 3 s.h.

Philosophy, objectives and roles of each of the pupil services will be considered. Emphasis will be placed on the team approach to services. Pupil services will be viewed as a facilitating function contributing to the development of individual pupils and to success of the instructional and management processes of the school.

CE 648 ADVANCED RESEARCH IN COUNSELOR EDUCATION 3 s.h.

Research literature in counselor education and research design are covered. The student will develop and present a trial dissertation proposal.

CE 649 PRINCIPLES OF SUPERVISION 3 s.h.

Designed to permit the student to study theory, research, and evolving concepts of supervision.

CE 650 SUPERVISION OF HUMAN DEVELOPMENT SPECIALISTS 3 s.h.

A practicum designed to provide allied experience in supervision of the human development practitioner. Focus is placed on assisting others in the process of developing interpersonal counseling relationship skills.

CE 651 EVALUATION PRINCIPLES 3 s.h.

Student will evaluate programs of services as related to the objectives of the students potential fields of practice. Emphasis will be placed on the development of appropriate research and preparation and reporting of recommendations based upon findings. Prerequisites: CE 643, 644.

CE 652 SKILLS APPROACH TO DECISION MAKING 3 s.h.

Decision-making is viewed as a multi-dimensional life process which integrates all facets of self in life planning and goal settings. Games, role playing, group work, and related experiences are utilized in providing experiential exposure to a diversity of decision-making models which can be applied to a variety of work settings.

CE 655 FIELD EXPERIENCE 3 s.h.

This course provides a supervised field experience for students in the counselor education programs. The plan and scope of the field experience will be determined by the student and the faculty on an individual basis. Prerequisite: core courses in master's program.

CE 656 INDEPENDENT STUDY 1-3 s.h.

Topic pertinent to the individual's program of study. By permission of department chairperson and advisor only.

CE 660 INTERNSHIP IN COUNSELOR EDUCATION 12 s.h.

The internship provides an opportunity to apply didactic experiences in an actual work setting. Sites must be approved by the department.

**ST 626 HISTORY OF HIGHER EDUCATION
IN THE UNITED STATES 3 s.h.**

Growth and trends in higher education with emphasis on the twentieth century. In addition to the traditional modes of post secondary education, continuing education programs, community colleges, and adult education will also be examined. A secondary focus will be the evolving role of student affairs.

**ST 627 STUDENT PERSONNEL SERVICES
IN HIGHER EDUCATION 3 s.h.**

Overview of student personnel work in higher education, highlighting functional area of student personnel, organization, philosophy, and the role of the services applied to the institution and the profession.

ST 628 INTERNSHIP IN STUDENT PERSONNEL SERVICES 3 s.h.

Affords the student an opportunity to gain practical experience in dealing with theories of his/her specialties. Includes one or two semesters in one of the student personnel offices at IUP or another institution under the leadership of a departmental director or coordinator.

ST 629 STUDENT DEVELOPMENT IN HIGHER EDUCATION 3 s.h.

Provides an overview of student development theories and the student development model. Includes the application of assessment, goal setting, intervention strategies, environmental management, and evaluation in higher education settings. Explores issues such as changing sex roles, sexual identity, life planning, and needs of special student groups.

ST 630 MANAGEMENT OF STUDENT PERSONNEL SERVICES 3 s.h.

The course teaches managerial concepts and skills for managing student personnel programs or services. Concepts covered include planning, leadership, management, supervision, organizational development, goal setting, collective bargaining, legal issues, and team building.

The Thesis/No Thesis Option, Master's Program

Several IUP master's degree programs offer the graduate student a thesis/no-thesis option.

When the no-thesis option is chosen, additional approved course work—usually six or more credit hours is required.

The typical committee thesis arrangement (3-6 s.h.) has the student working with a committee of four faculty members including the student's advisor and two faculty members, one of whom may or may not be a member of the program's department. The committee may include an off-campus

person with special expertise as part of the four if requested by the department and approved by the Graduate Dean.

DEPARTMENT	DEGREE	THESIS	CREDITS		COMMENTS
Adult/Community Education	M.A.	Optional	36	—	AC 645 may be substituted for the thesis.
Counselor Education	M.ED.	Optional	33	—	—
	M.A.	Optional	36	—	Thesis
			39	—	No Thesis
Student Personnel Services	M.A.	Optional	33	—	—

CRIMINOLOGY

The Department of Criminology offers a program of studies leading to a Master of Arts Degree in Criminology. The program is designed to prepare the graduate student for upper level administrative positions within the criminal justice field and the pursuit of a doctoral education. The design of the program allows the student to choose from a wide variety of courses within the department of criminology as well as elective courses in related departments.

Department Admission Requirements

In addition to meeting the requirements for admission to the Graduate School, a student intending to work toward a Master of Arts in Criminology will be required to have the following prerequisite academic and/or professional preparation:

- A. Students should be able to demonstrate a sound understanding of criminological theory and the criminal justice system; by
- B. Having knowledge gained through practice experience within the system of justice, or by specialized training, or completed graduate or undergraduate studies in a related field.*

*All applicants for the Master of Arts Degree in Criminology program must possess the essence of the knowledge offered in the undergraduate (BA) program core courses. These courses are:

- CR 102—Survey of Criminology
- CR 210—Criminal Law
- CR 300—Theory of Complex Criminal Justice Organizations
- CR 306—Criminological Research Methods
- CR 400—Theoretical Criminology
- CR 401—Contemporary Issues in Criminology

If upon the consideration of the Department of Criminology Graduate Committee an applicant is deemed to be deficient the Department, through the Director of Graduate Studies, will require appropriate undergraduate courses to remove these deficiencies.

MASTER OF ARTS IN CRIMINOLOGY

Students must choose between a thesis or a no-thesis curriculum:

Thesis Degree Requirements — A total of 36 semester hours is required including CR 600, CR 601, CR 605, CR 610, CR 630, CR 631, CR 849, and CR 850. Courses required from other disciplines include Philosophy of Ethics and Statistics. A student may be exempt from either of these requirements if he/she has demonstrated competency as determined by the Director of Graduate Studies. Students who elect the thesis option must also complete six hours of elective courses for a total of 36 hours.

No-Thesis Degree Requirements — A total of 36 semester hours is required including CR 600, CR 601, CR 605, CR 610, CR 630, CR 631, and CR 849. Courses required from other disciplines include Philosophy of Ethics and Statistics. A student may be exempt from either of these requirements if he/she has demonstrated competency as determined by the Director of Graduate Studies. Students who elect the no-thesis option must complete 12 hours of elective work for a total of 36 hours.

COURSE DESCRIPTIONS

CR 600 CRIMINOLOGICAL THEORY 3 s.h.

An examination of criminological theories with emphasis on origins and applications of relevant theoretical approaches to crime and criminally deviant behavior. Required of all graduate students.

CR 601 PROSEMINAR 3 s.h.

Survey of current research, critical issues in the administration of justice and criminological theory. Designed to acquaint the student with recent developments in the discipline of criminology. Required of all graduate students.

CR 605 RESEARCH METHODS 3 s.h.

Methods and techniques of research in Criminology. An in-depth examination of the role of research in the analysis, interpretation, and clarification of problems in Criminology and the administration of justice. The development of a thesis prospectus will be an end product of the course. Required of all graduate students.

CR 610 LEGAL ISSUES IN CRIMINOLOGY 3 s.h.

An in-depth study of contemporary legal issues faced by criminal justice professionals. Emphasis is placed on criminal constitution problems as well as the judicial review of administrative decisions made by criminal justice organizations. Required of all graduate students.

CR 630 SEMINAR IN ADMINISTRATION AND MANAGEMENT IN CRIMINAL JUSTICE 3 s.h.

The study of bureaucracy and complex organization with emphasis on the concepts and practices of the organization and management of agencies in the administration of justice. Required of all graduate students.

CR 631 SYSTEMS DYNAMICS IN THE ADMINISTRATION OF JUSTICE 3 s.h.

A study of dynamic systems and analytical techniques relevant for understanding new perspectives of the administration of justice. Required of all graduate students.

CR 650 SEMINAR IN ADVANCED CRIMINOLOGICAL THOUGHT 3 s.h.

An in-depth examination of select criminological thought.

CR 660 SEMINAR IN ADVANCED CRIMINAL LAW 3 s.h.
A study of the theory of law as a means of social control, advanced problems and issues in the use of the criminal sanctions, and alternative legal means of controlling deviant conduct.

CR 665 CRIMINAL JUSTICE PLANNING AND EVALUATION 3 s.h.
The study of planning and evaluation in criminology and the administration of justice, the literature and practices including problems and issues and tasks confronting planners and evaluators.

CR 670 SEMINAR IN CONTEMPORARY CORRECTIONS 3 s.h.
An examination of current issues and problems in contemporary corrections.

CR 675 SEMINAR IN CONTEMPORARY LAW ENFORCEMENT 3 s.h.
A social psychological examination of current issues and problems in contemporary law enforcement.

CR 681 SPECIAL TOPICS 3 s.h.
Special topics courses are offered at the discretion of the department in a wide area of subjects directly related to law enforcement, courts, corrections or security.

CR 685 SEMINAR IN CONTEMPORARY JUVENILE JUSTICE AND DELINQUENCY 3 s.h.
An examination of current issues and problems in contemporary juvenile justice and delinquency.

CR 690 SEMINAR IN THE CONTEMPORARY JUDICIAL SYSTEM 3 s.h.
An examination of current issues and problems in the contemporary judicial system.

CR 698 GRADUATE READINGS IN CRIMINOLOGY 3 s.h.
With faculty supervision, students will read at least six major criminological texts and participate in a seminar situation for the purpose of discussing the reading materials.

CR 699 INDEPENDENT/INDIVIDUALIZED STUDY 3 s.h.
Research of a significant issue or problem in criminology or the administration of justice. Instructor and graduate director approval required. May be taken twice for a maximum of six semester hours.

CR 849 COMPREHENSIVE EXAMINATION 0 s.h.
Written and/or oral examination to determine competency. Required of all students during the semester in which they are enrolled for their last graduate course.

CR 850 THESIS 3-6 s.h.

ECONOMICS

The Economics Department does not currently offer a graduate degree. The graduate courses offered by the department are a component of master's degree programs offered by other departments and colleges.

COURSE DESCRIPTIONS

EC 501 FOUNDATIONS OF MODERN ECONOMICS 3 s.h.
Not open to students who have credits of C or better in undergraduate EC 121-122 sequence. Survey of micro and macroeconomics designed for the student who is not already well-grounded in the field.

EC 520 HISTORY OF ECONOMIC THOUGHT 3 s.h.

Examination of social, political, intellectual, and economic origins of work of prominent past economists, and of the content and impact of their work. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 521 MACROECONOMIC ANALYSIS 3 s.h.

Covers national income theory with emphasis on the causes and cures of inflation and unemployment. Includes study of consumption and investment theories, fiscal and monetary policy, national income accounts, and growth analysis. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 522 MICROECONOMIC ANALYSIS 3 s.h.

Analysis of the theories of consumer demand, the firm, exchange, market structures, distribution, and welfare economics. Prerequisite: EC 501 or credits of C or better in EC 122, Principles of Economics II, or permission of the instructor.

EC 525 MONETARY ECONOMICS 3 s.h.

Structure and function of monetary institutions including the Federal Reserve System, commercial banks, and financial intermediaries, theory of monetary economy, and monetary policy. Prerequisite: EC 501, or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 530 LABOR ECONOMICS 3 s.h.

History, structure and operations of trade unions and employer organizations; major Federal labor legislation; collective bargaining theory; wage determination; current labor problems. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 534 ECONOMICS OF CORPORATE DECISIONS 3 s.h.

Applies economic theory to corporate decision-making. Covers mathematical solutions to various profit-maximization and cost minimization problems and examines statistical estimation of demand and cost functions. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 536 STATE AND LOCAL FINANCE 3 s.h.

Analysis of the character and consequences of state and local government revenue procurement, expenditures, and fiscal systems. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 541 CONTEMPORARY ECONOMIC ISSUES 3 s.h.

Problem areas of domestic economy. Primary focus in each semester is determined by student-instructor interest. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 545 INTERNATIONAL ECONOMICS 3 s.h.

Nature of world economy, international trade, international investment, current international institutions, and foreign economic policy of the United States. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 550 COMPARATIVE ECONOMIC SYSTEMS 3 s.h.

Basic economic issues in capitalism, socialism, communism, and fascism, and their relationships to political and social problems. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 560 ECONOMICS OF HEALTH SERVICES 3 s.h.

Analysis of the allocation of resources in the health sector using demand and supply techniques. Pricing and output by physicians, hospitals, and their health agencies are considered, along with National health insurance and current policy issues. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 571 ECONOMICS OF LABOR LEGISLATION 3 s.h.

Economic background and effects of governmental regulation of labor relations, with emphasis on a detailed examination of the National Labor Relations Act as amended. Prerequisite: EC 530 or permission of the instructor.

EC 572 ECONOMICS OF WAGES AND EMPLOYMENT 3 s.h.

Analysis of wages and employment under various market structures. Also, an analysis of the impact of labor market forces on wages, prices, and distributive shares. Prerequisite: EC 530 or permission of the instructor.

EC 573 ECONOMICS OF HUMAN RESOURCES 3 s.h.

Analysis of the development and utilization of human resources with an emphasis on the income and employment situation of minorities. Manpower policy options designed to increase the value and use of human resources are also explored. Prerequisite: EC 530 or permission of the instructor.

EC 574 ECONOMICS OF EDUCATION 3 s.h.

Analysis of the costs and benefits of education, the impact of education on economic growth, the private and public process of determining investment in education, and planning at the institutional level. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 580 SEMINAR 3 s.h.

Seminar in selected economic issues or problems. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 582 URBAN ECONOMICS 3 s.h.

Analysis of the structure of urban economy; goals, processes, problems and policy in urban economic development. Prerequisite: EC 501 or grade of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 583 REGIONAL ECONOMICS 3 s.h.

Process of regional economic growth, location theory, basic techniques of regional analysis, public and private area development programs. Prerequisite: EC 501 or grade of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 634 ECONOMICS OF CORPORATE DECISIONS 3 s.h.

Applies economic theory to corporate decision making. Covers mathematical solutions to various profit-maximization and cost minimization problems and examines statistical estimation of demand and cost functions. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EC 699 INDEPENDENT STUDY 1-6 s.h.

Directed readings, written assignments, and research on a specific topic determined by the student and the instructor. Prerequisite: EC 501 or credits of C or better in six s.h. of Principles of Economics or permission of the instructor.

EDUCATIONAL PSYCHOLOGY

The Educational Psychology Department offers programs leading to a Master's of Education, School Psychology certification, and Doctor of Education degree. The Master of Education programs may be taken with an emphasis on School Psychology, Human Development and Learning, or Education Evaluation and Research. The Doctor of Education is in the area of School Psychology.

After admission to the Graduate School, the candidate must secure the Departmental Application Packet, which includes further information from the Educational Psychology Department. Potential candidates will be interviewed by the Program Admissions Committee after the departmental application, copies of transcripts from The Graduate School, and official Graduate Record Examination scores, including Education or Psychology are received. An adviser will be assigned to approved candidates and no coursework may be scheduled without the adviser's approval. The adviser may approve alternate courses to meet required competencies.

Admission to the programs will be based on evidence of previous scholarship and/or potential for academic success, personal and professional qualities deemed necessary for adequate functioning as a specialist in education and motivation for professional excellence. Continued enrollment once begun, is expected. Exceptions to this policy must be filed in writing and approved by the student's program committee.

Candidates for admission to master's degree programs must have a bachelor's degree from an accredited institution. Candidates for admission to the post-master's certification program must have a master's degree from an accredited institution.

MASTER OF EDUCATION IN EDUCATIONAL PSYCHOLOGY

The Master of Education degree in Educational Psychology program (33-36 s.h., depending upon choice of thesis or non-thesis option) has been designed to give the interested student a broad theoretical and practical background in the areas of education and psychology. There are three majors in this degree.

General requirements are: All students will take the Professional Development Area (total of nine s.h.), Humanistic Studies (three s.h.), select one FE 611, FE 612, FE 613; Behavioral Studies (three s.h.), select one EP 604 or EP 578, EP 573, EP 576, CE 629, EX 631, or EX 500; Research (six s.h.), GR 615, GR 516.

Requirements for the three major areas are as follows:

School Psychology — (23-27 s.h.) is designed to prepare the interested student for entrance into the post-master's certification program. Professional Specialization courses (six s.h.) EP 618, EP 662, Subject Area and/or Elective (17-21 s.h.) EP 604, EP 578, EP 576, EP 572, EP 573, EP 650, EP 681, ED 601, PC 640, EX 631, EX 500, EX 639, EX 660, EX 665, CE 625 or CE 635, SH 630, SH 614, EP 850.

Human Development and Learning — (23-27 s.h.) is designed to prepare the teacher to be more effective in the classroom and to have a balanced program in Educational Psychology. Professional Specialization

courses (six s.h.) EP 618, EP 604 or EP 578, Subject Area and/or Electives (17-21 s.h.) EP 604, EP 578, EP 576, EP 572, EP 573, EP 650, EP 681, AC 520, PC 569, PC 640, EX 500, EX 639, EX 665, CE 625 or CE 635, EP 850.

Educational Evaluation and Research — (23-27 s.h.) is designed to provide a broad theoretical and practical background in Educational Evaluation and Research. Professional Specialization (six s.h.) EP 618, EP 578, Subject Area and/or Electives (17-21 s.h.) EP 604, EP 662, EP 576, EP 573, EP 681, GR 615, GR 516, GR 517, CO 502, CE 648, EP 850. Thesis required.

CERTIFICATE OF ADVANCED STUDY IN SCHOOL PSYCHOLOGY — POST-MASTER'S DEGREE PROGRAM

A certificate of Advanced Study in School Psychology may be issued to those students who have completed a minimum of 66-69 graduate hours, 33 of which should be approved graduate hours in the university beyond the master's degree, and who have met all of the requirements for certification as a school psychologist.

The School Psychology Program is designed for those individuals who are seeking certification as school psychologists. The objectives of the program are to train competent individuals who will demonstrate (1) an ability to evaluate students and prescribe interventions, (2) an understanding of individual and group dynamics, (3) an understanding of the educational system and learning process, and (4) an ability to apply all acquired professional competencies. There is a required comprehensive exam, practicum, and internship experiences. Certification as a school psychologist is recommended when all of the indicated role competencies are demonstrated by the candidate. Completion of a plan of study may be pursued on either a full-time or part-time schedule of coursework.

The Professional Specialization studies courses for the program for 21-24 s.h. are EP 611, EP 612, EP 613, EP 663 and EP 650-EP 651 (12-15 s.h.). The other approved courses for nine s.h. to meet competency requirements are EX 666 or EP 581, and PC 635, PC 647. For final certification other courses and/or additional internship hours may be required by the School Psychology Committee to satisfy competency requirements.

For descriptions of EX courses, see section on SPECIAL EDUCATION; for PC course, PSYCHOLOGY.

COOPERATIVE DOCTORATE IN SCHOOL PSYCHOLOGY

The Doctor of Education (Ed.D) in School Psychology is designed as a sixty-nine semester hour program beyond the master's degree. Thirty-three hours of the program involve the post-master's preparation for certification as a school psychologist in the Commonwealth of Pennsylvania completed at either Indiana University of Pennsylvania, California University of Pennsylvania, Edinboro University of Pennsylvania, or Millersville University of Pennsylvania. The remaining thirty-six semester hours, designated as the doctoral sequence, may be implemented to complete the plan of study for the doctorate in School Psychology at Indiana University of Pennsylvania.

Students will be able to enter the doctoral sequence only after completion of the 33 semester hour certification program in School Psychology. Since the Ed.D. is a practitioner oriented degree, it will be recommended that the students who apply to the program have at least two years of experience as a practicing school psychologist, part of which may be an internship. Completion of a plan of study may be pursued on either a full-time or part-time schedule of coursework.

COURSE DESCRIPTIONS

EP 571 PSYCHOLOGY FOR TEACHING SEX EDUCATION 3 s.h.

This course is designed to present concepts and programs for teaching sex education. The course includes detailed teaching strategies for the various grade levels from K-12.

EP 572 PSYCHOLOGY OF CHILDHOOD EDUCATION 3 s.h.

Studies relationship which physical, social, emotional, and intellectual development have on theory and practice of childhood and pre-adolescent education.

EP 573 PSYCHOLOGY OF ADOLESCENT EDUCATION 3 s.h.

Concerned with study of significant characteristics of adolescence, and understanding the role of cultural influences on formation of behavior.

EP 576 BEHAVIOR PROBLEMS 3 s.h.

Explores behavior problems encountered in classroom situations and gives causes, characteristics and some remedial techniques.

EP 578 LEARNING 3 s.h.

Explores learning theories and educational application in working with learning problems in the classroom.

EP 583 EDUCATION OF THE DISADVANTAGED CHILD 3 s.h.

Acquisition of necessary understandings of physiological, psychological, and social implications relevant to working with and teaching disadvantaged children.

EP 585 HUMANIZING THE CLASSROOM 3 s.h.

An experimental course concerned with human-relations-skills training and particular emphasis on group process, non-verbal communication, listening and responding skills. The focus is primarily on the translation of these skills into effecting productive classroom environments in educational settings.

EP 588 INTERPERSONAL EFFECTIVENESS AND COMMUNICATION SKILLS 3 s.h.

Designed to increase professional effectiveness and improve communication skills with educational, business, and industrial settings. Includes analysis of non-verbal behaviors, active listening, and rational self-analysis and assertion skills.

EP 604 ADVANCED EDUCATIONAL PSYCHOLOGY 3 s.h.

An upward extension of Educational psychology with a systematic review of current research and learning theory with emphasis on classroom application.

EP 611 INTRODUCTION TO SCHOOL PSYCHOLOGY 3 s.h.

Designed for those students who are preparing to function as school psychologists, and includes role concepts and other responsibilities of a school psychologist.

EP 612 INDIVIDUAL EVALUATION I 3 s.h.

Individual testing and professional competency in Stanford-Binet Scale, Wechsler Scales for children, and related tests of intelligence.

EP 613 INDIVIDUAL EVALUATION II 3 s.h.
Individual testing and professional competency in Stanford Binet Scale, Wechsler Scales, and other pertinent individual diagnostic tests.

EP 618 INTERPRETATION OF EDUCATIONAL AND PSYCHOLOGICAL TESTS 3 s.h.
Designed to provide the individual with information necessary to understand, evaluate, and interpret results of educational and psychological tests accurately and meaningfully.

EP 650 INTERNSHIP I 3 s.h.
Supervised experiences in Educational Psychology. Prerequisite: For approved candidates.

EP 651 INTERNSHIP II 3-12 s.h.
Clinical and field experience with mentally and physically handicapped and emotionally disturbed children. Prerequisite: For approved School Psychologist candidates.

EP 652 DOCTORAL INTERNSHIP 3 s.h.
Supervised field experience in psychological procedures and practices in an educational setting and/or facility appropriate to the special professional interests of the student. Prerequisite: School Psychology major, Permission of instructor.

EP 662 PSYCHOTHERAPY AND GROUP DYNAMICS 3 s.h.
A systematic study of major techniques of counseling and psychotherapy, and application of principles of group dynamics to educational settings.

EP 663 PROJECTIVE TECHNIQUES 3 s.h.
An introduction to various personality and behavior assessment techniques currently used. Prerequisite: For approved School Psychologist candidates.

EP 664 SEMINAR IN SCHOOL PSYCHOLOGY I 3 s.h.
An examination of practices, trends, and issues in a specialized area of diagnosis. The areas to be examined will be based on the predetermined interests of the students and the expertise of the available faculty. Prerequisite: Permission of instructor.

EP 665 SEMINAR IN SCHOOL PSYCHOLOGY II 3 s.h.
An examination of practices, trends, and issues in a specialized area of treatment or remediation. The areas to be examined will correspond to those covered in EP 664. The focus of the seminar will be to develop the students' understanding and skills in implementing appropriate treatment and remedial strategies in homes, school and clinic settings. Prerequisite: Permission of instructor.

EP 681 SPECIAL TOPICS IN EDUCATIONAL PSYCHOLOGY 3 s.h.
Designed for those students who wish to do independent research in special areas. Prerequisite: department chairperson permission.

ELEMENTARY EDUCATION

The Elementary Education master's curriculum is designed to assist the graduate student to broaden or strengthen background in academic areas and in professional education. The graduate student may elect one of several specialized fields of study, including curricula in general elementary education, early childhood education, and reading.

Upon admission to any of the Elementary Education programs, students will be notified of an adviser by the Coordinator of the specific program. At this time, the student and adviser outline a tentative program of studies.

MASTER OF EDUCATION IN ELEMENTARY EDUCATION

Students working toward a master's degree in Elementary Education should complete 30 semester hours of work (thesis option) or 36 semester hours of work (non-thesis option) from the following areas: Nine semester hours in Professional Development, including a Foundations of Education course, a Behavioral Studies course and Elements of Research; six semester hours in a Specialization Core; 18 semester hours of Elementary Education electives; and EL 680, Seminar in Advanced Research. With the approval of the coordinator, when appropriate, six semester hours of workshop credit or graduate electives may be applied to the master's degree.

GRADUATE PROGRAMS IN EARLY CHILDHOOD EDUCATION

Students seeking Instructional Level II certification with a specialization in early childhood education or a master of education degree specializing in early childhood must complete the following requirements: a minimum of 24 s.h. is required for students with an Instructional I certificate seeking an Instructional II certificate or 30 s.h. minimum is required for the master of education degree program. Courses scheduled by the student should have the approval of the program coordinator.

Students pursuing the M.Ed. with an Early Childhood concentration must complete 30 s.h. (thesis option) or 36 s.h. (non-thesis option) from the following areas: nine semester hours in Professional Development, including a Foundations of Education course, a Behavioral Studies course, and Elements of Research; six s.h. in Specialization Core; 18 s.h. of Elementary Education electives including EL and EE courses; and EL 680, Seminar in Advanced Research. With the approval of the coordinator, when appropriate, nine s.h. of graduate electives may be applied to the master's degree from Sociology/Anthropology or Child Development/Family Relations. In addition an Internship in one of the above areas can be included with the Specialization Core with the approval of the program coordinator.

THE DOCTORATE IN ELEMENTARY EDUCATION

The Doctor of Education degree in Elementary Education is designed for those who wish to teach at the college or university level or who desire to work in a teaching, supervisory, or administrative capacity. A candidate for this degree is expected to acquire a broad knowledge of various aspects of education, and to demonstrate, through the completion of an acceptable dissertation, the ability to conduct an independent investigation of a topic approved by an advisory committee.

A doctorate is defined as 90 semester hours of advanced study beyond the undergraduate degree program. Using this criterion, students who have already obtained a master's degree in education (30 semester hours) from an accredited institution of higher learning would be responsible for approximately 60 remaining semester hours of study and research. In most cases, approximately 45 semester hours, or 15 different 3 credit courses, would

be devoted to coursework. The remaining 15 credits would be allocated in the internship (6 credits) and to the dissertation (9 credits). The exact number of hours in coursework is determined by the director of the doctoral program and doctoral committee members. Each doctoral applicant's credentials are evaluated on an individual basis.

A complete description of the Doctor of Education program in Elementary Education can be obtained from the Department of Elementary Education, Davis Hall.

COURSE DESCRIPTIONS

EE 660 EARLY CHILDHOOD STUDY TECHNIQUES AND ASSESSMENT TOOLS

3 s.h.

Designed to provide the student with a specific method of studying children from three through eight years. Students learn to observe, record and analyze pertinent information, and to suggest ways to help children toward positive self development. Tests for assessment of the young child in areas of perception, concept development, self-inventories, general intellectual ability, readiness, and academic ability will be examined, administered, and interpreted.

EE 661 EARLY CHILDHOOD PHILOSOPHY, CURRICULUM, AND MATERIALS

3 s.h.

Introduces students to philosophy and historical background of pre-school education and their influences on current programs and curriculum. Curriculum patterns and strategies, including available materials, for schools for the younger child are introduced and evaluated.

EE 662 EARLY CHILDHOOD FIELD STUDY EXPERIENCES

3 s.h.

Includes direct observation and teaching in early childhood programs. Seminar sessions will be directed toward the study of appropriate strategies with immediate application with children. Students will be expected to meet the individual needs of children they are teaching. Close supportive relationships with parents and community will be stressed. Prerequisites: EE 660, EE 661, EE 664.

EE 664 EARLY CHILDHOOD CURRICULUM IN PRIMARY GRADES

3 s.h.

Based on developmental levels of children, students understand the appropriate concepts and strategies which should be included in the primary grade component of early childhood.

EE 665 ISSUES IN EARLY CHILDHOOD EDUCATION

3 s.h.

Focuses on the major controversies facing the early childhood educator. Opposing viewpoints will be presented for review, reaction and debate. Students will be encouraged to establish priorities and clarify value systems to arrive at solutions to the critical issues.

EE 666 EVALUATION OF PROGRAMS FOR YOUNG CHILDREN

3 s.h.

Analysis of extant early childhood programs. Examination of early intervention projects and materials; review of research findings and implications; cross-cultural comparisons of preschool programs. Prerequisites: EE 661, 664, or permission of the instructor.

**EL 510 SEMINAR IN ELEMENTARY SCHOOL EVALUATION
AND ACCREDITATION**

3 s.h.

In conjunction with the Assembly of Elementary Schools of the Middle States Association, provides instruction and field practicum in elementary school evaluation, planning and accreditation. Books and supplies provided by Middle States Association. Provides leadership training for students interested in developing school evaluation plans and serving on accreditation teams.

ED 631 CURRICULUM DEVELOPMENT

3 s.h.

Students will learn curriculum development by differentiating among educational goals, objectives and learning activities. Sources of curriculum goals and objectives such as needs assessment, philosophical models and psychological models will be studied. The design and selection of learning activities as well as designs for evaluating the effectiveness of curricula also will be considered.

**ED 632 SYSTEMATIC OBSERVATION OF
CLASSROOM BEHAVIOR**

3 s.h.

Students will learn how to code classroom verbal interaction through actual demonstration, video tapes, and audio recordings, with emphasis on various teaching strategies, monitoring verbal interaction, and supervisory sessions. Designed for elementary majors, curriculum supervisors, and students majoring in secondary and supervisory behavior.

EL 641 RECENT TRENDS IN SOCIAL STUDIES

3 s.h.

Specific problems with curriculum, teaching, and learning experiences and evaluation are stressed. Each student will research a special problem or area of interest.

EL 642 MATHEMATICS IN ELEMENTARY SCHOOL

3 s.h.

Experiences with manipulative materials, games and puzzles, activity centers, and lab approach to mathematics. Inexpensive mathematics lab equipment will be constructed. Sources of literature and materials will be presented and used. Opportunities will be given to write activity and problem cards and to plan mathematics activity centers. Psychological foundations and mathematics structure will be used as reference for suggested activities and curriculum studies.

EL 643 RESOURCE MATERIALS IN ELEMENTARY SCIENCE

3 s.h.

An introduction of underlying philosophy and use of materials of several of the current national curriculum programs in elementary science. Emphasis is placed on the following programs: (1) Science: A Process Approach (SAPA), (2) Elementary Science Study (ESS), (3) Science Curriculum Improvement Study (SCIS), and (4) Conceptually Oriented Program in Elementary Science (COPES), including micro-teaching techniques and development and preparation of individualized self-instruction modules. Students are required to work with various program materials.

EL 644 RECENT TRENDS IN LANGUAGE ARTS

3 s.h.

Designed to help students to direct more effective communication through study of problems, recent trends and contributions of research in the broad fields of listening, oral and written communication.

EL 645 EXPERIMENTAL STUDIES IN ART EDUCATION

3 s.h.

Teachers will undertake art experiences in various media as they are adapted to provision of art experiences for the child. Emphasis will be placed on stages of growth, type of motivation, and ways of administering stimuli. Perceptual awareness and understanding and appreciation of visual art forms and their importance in the lives of people in our town and other cultures will be developed along with study of the exceptional child to recognize and encourage evidences of art potentials as well as wholesome self-expression.

**EL 646 MODERN PROCEDURES & SKILLS IN
ELEMENTARY MUSIC**

3 s.h.

New dimensions in thinking about elementary music for children. Emphasis is placed on the young student discovering interesting aspects of music — sounds, rhythm through movement, use of percussive and simple method instruments, and music of countries. (Music Staff)

EL 647 RESOURCE MATERIALS IN CHILDREN'S LITERATURE

3 s.h.

Evaluation and selection of literature as a classroom resource for teaching and learning, including illustrations, folklore, poetry, modern and traditional fiction and nonfiction.

EL 648 CREATIVITY AND THE ELEMENTARY SCHOOL CHILD

3 s.h.

Includes a study of creative thinking and ways to develop creativity in children including strategies and techniques to use in the classroom. Ways of measuring creativity and analyzing the role of the teacher are included. Students are encouraged to develop their own creativity.

ED 650 SCHOOL AND COMMUNITY

3 s.h.

Development and maintenance of a purposeful program of communication between the school and the community through study of selection, organization and functions of citizens advisory committees and cooperative use of various community services.

EL 651 RECENT ISSUES AND INNOVATIONS IN EDUCATION

3 s.h.

Newer trends in classroom procedure, equipment, and materials as well as problems involved in improvement of instruction. Whenever possible sessions will be held to demonstrate and use recently developed materials. Individual research and field trips into many of the new programs in elementary education.

ED 652 SCHOOL EVALUATION

3 s.h.

Current models for both formative and summative evaluations are presented with emphasis on their application to school programs and other educational projects. Prior knowledge or experience in curriculum development and/or project proposals would be helpful but not required.

**ED 653 SUPERVISION AND THE IMPROVEMENT
OF INSTRUCTION**

3 s.h.

Purposes, patterns, processes, and products of the supervision of instruction with emphasis on the supervisor as the educational leader whose concern is improvement of instruction through the on-going growth and professional development of his/her staff.

**EL 655 RECENT TRENDS IN HUMAN DEVELOPMENT
AND LEARNING**

3 s.h.

Concerned with the literature and recent research in the field of human development and learning and how they relate to the education of children. Characteristics of the learner and the developmental aspect of children will be stressed.

EA 656 SCHOOL ADMINISTRATION

3 s.h.

Designed as basic course in school administration, intended to serve as an introduction to principles and practices of school administration for students who aspire to a supervisory or administrative position in public schools. Human aspects of educational administration are emphasized.

EA 657 SCHOOL PERSONNEL ADMINISTRATION

3 s.h.

Designed to provide background for potential principals and supervisors in matters pertaining to functions of various types of personnel employed in schools. Knowledge of organizational practices for proper and effective utilization of personnel and recognition of administrator's role in providing services to both staff and pupils.

ED 658 SCHOOL LAW AND NEGOTIATIONS 3 s.h.

An understanding of legal principles as they pertain to functions of personnel in public school system and to persons engaged in education. Study of statutory enactments, review of court actions through case studies, and analysis of collective negotiation laws and cases.

EL 659 ADMINISTRATION OF THE ELEMENTARY SCHOOL 3 s.h.

Principles and techniques of elementary school administration. Administrators will be viewed as leaders of teachers, children, non-professional staff and the community to develop and maintain the best educational system possible.

EL 677 SUPERVISED INTERNSHIP 6 s.h.

A carefully planned field-based on internal work experience proposed by the advanced graduate student to extend professional competence, subject to approval by advisory committee. Registration only by permission.

EL 678 SEMINAR IN ELEMENTARY EDUCATION INTERNSHIP 3 s.h.

Provides opportunities for in-depth study in special areas in elementary education. Designed primarily for doctoral and post master's candidates. Registration by permission only.

EL 680 SEMINAR IN ADVANCED RESEARCH 3 s.h.

This course focuses on the application of experimental and survey designs within the school setting. Students will be expected to use the computer in analyzing a research project. Students will be able to interpret factorial analysis of variance, analysis of covariance, and also some non-parametric research designs.

EL 681 SPECIAL TOPICS IN EDUCATION 3 s.h.

Designed for the students who wish to do independent research in special areas.

EL 699 INDEPENDENT STUDY IN ELEMENTARY EDUCATION 1-3 s.h.

Students will select one or more topics which are of critical importance in elementary education and will meet staff members for independent reading, study, analysis, and evaluation. Registration only by permission of Graduate Committee.

EL 850 THESIS 3 s.h.

For students writing a thesis. Should be scheduled for the semester in which the student plans to complete his/her work. All thesis writing involves a committee composed of the student's adviser, two additional faculty members, and the Associate Dean for Research.

EL 950 DISSERTATION 1-12 s.h.

Students preparing a doctoral dissertation for credit must register for this course. Number of credits assigned and the extent of time for which research activity is scheduled depend on nature and scope of student's research problem and his/her general doctoral program.

NOTE: Credits for both thesis and dissertation, if not completed during the semester scheduled, are recorded as RESEARCH IN PROGRESS. They remain so until the paper is approved. They DO NOT automatically revert to the grade "F" in a specific length of time. Also, thesis and dissertation can be programmed above the regular load.

N.B. Candidates wishing to select an emphasis in Reading are referred to the Reading section of this catalog.

ENGLISH

A candidate for a master's degree in English may choose a program leading to either the Master of Education or the Master of Arts. The choice will depend on the background of the candidate and his/her purpose of pursuing graduate study. Both programs share a common aim of increasing the candidate's knowledge of English language and literature and introducing the student to the discipline of advanced study. In addition, the Master of Education degree aims at preparing teachers for public schools.

After a student is admitted to The Graduate school, the Director of Graduate Studies will consult with him or her about the scheduling of courses. The student should apply for the candidacy before 12 credits have been earned.

The writing of a thesis is optional for both the MA and MEd degree. The English department values writing and research; however, a candidate's decision concerning the thesis should be made on the basis of his/her purposes in obtaining the degree and the extent to which training in research will enhance both professional and personal goals. Under special circumstances and upon request from The Graduate School, a thesis may be written for additional credit after the student has already completed the master's degree without a thesis.

MASTER OF ARTS IN ENGLISH

The MA degree either with or without a thesis requires a minimum of 30 s.h. beyond the bachelor's degree. The candidate who chooses not to write a thesis will take all 30 s.h. in course work. Depending upon the nature of the thesis, the candidate who chooses to do research will take either three or six s.h. of the minimum 30 as thesis and the remainder in course work.

Required of all MA candidates are (1) EN 674 and (2) proficiency in a single language in addition to English. The language requirement may be satisfied by acceptable undergraduate credit of 12 hours, by examination through the Foreign Languages Department at IUP, or by the Graduate School Foreign Language Test through the Educational Testing Service, Princeton.

The MA candidate may apply a maximum of six s.h. in a related field (e.g. history, philosophy, psychology) toward satisfying total course requirements. All hours remaining from the minimum 30 hours requirement will be satisfied by courses listed in the catalog EN 529 through EN 699.

MASTER OF EDUCATION IN ENGLISH

The candidate for the MEd has the same thesis option as the candidate for the MA. The MEd candidate must satisfy the following requirements: (1) A Pennsylvania Teacher's Certificate in English or its equivalent from another state (2) Three s.h. in Humanistic Studies: any course from FE 611, 612, 613, 514 (3) Three s.h. in Behavioral Studies: EP 604, EP 573, EP 576, EP 578, EP 580, CE 629, CE 639, or EX 631 (4) Three hours in Research: GR 614 (5) Six hours Specialization Core: EN 603 and EN 693; and (6) Three hours in bibliographical methods: EN 674.

Depending upon choice of thesis options, the candidate will complete the 30 hour minimum requirement by taking from six to 12 hours of electives, chosen from courses EN 529 through EN 699.

There is no foreign language requirement for the MEd.

For description of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX courses, SPECIAL EDUCATION.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

DOCTOR OF PHILOSOPHY PROGRAMS

There are two distinct doctoral programs in English, one in English and American literature, and the other in Rhetoric/Linguistics. Both programs lead to a Doctor of Philosophy in English.

I. Doctor of Philosophy in English and American Literature

The program leading to the Doctor of Philosophy in English and American literature is designed for those who wish to teach at the college or university level. As such, this plan of study places strong emphasis upon the humanistic tradition in literature, for the values expressed therein are felt to be the essential concern of a liberal arts education. A candidate for this degree is expected to acquire a broad knowledge in limited areas of study and to show through the completion of an acceptable dissertation the ability to conduct an independent investigation of a topic approved by the department. To become a candidate the applicant must meet all The Graduate School requirements for candidacy, as well as the special requirements of the English department. Admission to course work beyond the master's degree does not constitute admission to candidacy for the PhD program. No specific number of course credits entitles a student to the degree, but a minimum of 60 semester hours of credit, exclusive of research credits, must be earned beyond the bachelor's degree. Applications for candidacy will be reviewed by a departmental committee after nine hours of graduate credit have been earned beyond the master's degree and before 15 hours have been completed. In determining whether or not an applicant should be accepted as a candidate for the degree of Doctor of Philosophy, an Advisory Committee will consider the applicant's scores on the Graduate Record Examination, performance in course work, and whenever applicable, performance as a teaching-intern.

On application for candidacy, the candidate will be assigned to an Advisory Committee who will help the candidate prepare a plan of study for a comprehensive examination, both written and oral, which will be taken on the recommendation of the Advisory Committee near the end of course requirements and before registering for EN 950 dissertation credits.

The linguistic requirement for PhD candidates, which must be completed before the comprehensive examinations, may be satisfied by one of the following comparative study options: (1) six graduate credits in theoretical or applied linguistics; (2) six graduate credits in computer languages; (3) foreign language proficiency as measured either by ETA or Foreign Language Department examinations. The Student's Advisory Committee will attempt to suit the language study to the student's needs as a teacher and

researcher. Sole authority in determining foreign language proficiency rests with the Advisory Committee.

On approval of the Advisory Committee, a candidate may take as many as nine graduate hours of course work in a minor field in support of major research interest.

Although there are specific requirements for the degree, the professional and educational background of a number of students will make it necessary to waive certain requirements to avoid needless duplication. Decisions to waive requirements will be made by the student's Advisory Committee.

Candidates must demonstrate the capacity to teach effectively, either in the departmental teaching-internship program, or through other acceptable teaching experience. English is required of all candidates.

As this catalog is being prepared, the PhD program in English and American literature is undergoing revisions. Both requirements and course offerings can be expected to change. A complete description can be obtained from the English Department or from the Graduate School.

II. Doctor of Philosophy in Rhetoric and Linguistics

The program which leads to the Doctor of Philosophy in English is designed for teaching English in the community college or the four-year college. The pre-service candidate for this degree is expected to acquire a thorough understanding of the community college as an institution and to demonstrate, largely through a semester's internship at a community college, the ability to teach effectively.

The in-service candidate for this degree may have the internship waived after a description and evaluation of his/her teaching experiences have been accepted.

Upon admission to the program, the candidate will be assigned to a Program/Evaluation Committee which will, in consultation with the candidate, work out a program of study. The Program/Evaluation Committee will review also the candidate's application for candidacy, which must be submitted after nine hours of graduate credit have been earned and before 15 hours have been completed. Another function of the Program/Evaluation Committee will be to prepare a comprehensive examination, written and oral, for each candidate.

Although there are some general course and research requirements for this degree, they may be waived by the student's Program/Evaluation Committee if they believe the student has already acquired the information or specific competencies which these courses are designed to communicate or develop. These general course requirements are as follows: EN 689, EN 692, EN 631, EN 603, a course in the teaching of literature, nine hours of elective credits in psychology, sociology, communications media, etc.; a dissertation related to Rhetoric and Linguistics; a semester's internship at a community college.

As this catalog is being prepared, the program is undergoing revision of requirements and of course offerings. Notable is the ESL component of this program which is fully in place and currently offered on a regular basis. A complete description of all revisions can be obtained from the English Department or from the Graduate School.

COURSE DESCRIPTIONS

- EN 529 HISTORY OF THE ENGLISH LANGUAGE 3 s.h.
Development of phonology, syntax and lexicon as well as rhetorical theories from Old English through Modern English.
- EN 542 CLASSICAL LITERATURE 3 s.h.
Ranges from drama to lyrics and epic poetry in translation.
- EN 560 BRITISH LITERATURE TO 1500 3 s.h.
Intensive study of some major works of Old or Middle English.
- EN 561 CHAUCER 3 s.h.
Major works of Geoffrey Chaucer are studied as literature with emphasis upon pronunciation, versification, language, and textual problems.
- EN 565 BRITISH LITERATURE—RENAISSANCE (1500-1600) 3 s.h.
Investigation of an area of English Renaissance that is not currently treated in course work.
- EN 566 SHAKESPEARE 3 s.h.
In addition to the plays and the scholarship on them, study of the historical theatrical influences that affected Shakespeare.
- EN 569 SEVENTEENTH CENTURY PROSE AND POETRY 3 s.h.
Major writers from the death of Elizabeth to 1660, excluding Shakespeare and Milton.
- EN 570 MILTON 3 s.h.
Major prose and poetry of John Milton and the religious and political controversies reflected in Milton's work.
- EN 579 ENGLISH ROMANTIC LITERATURE 3 s.h.
Works of the major poets and essayists from 1798 to 1832.
- EN 580 VICTORIAN LITERATURE 3 s.h.
Examines major social, political, economic, and religious issues in the works of the leading poets and prose writers from 1832 to 1890.
- EN 581 SPECIAL TOPICS IN LANGUAGE AND LITERATURE 3 s.h.
Allows students to pursue subjects such as textual criticism, prosody, and computers and literature not covered in detail in existing courses.
- EN 590 LITERARY BRITAIN 3 s.h.
A three- or six-week's tour of major sites important to English literature. Always includes London, Stratford, and Cambridge.
- EN 601 AMERICAN ENGLISH GRAMMAR 3 s.h.
Phonology, morphology and syntax of present-day English, various approaches to analysis of English Grammar, and detailed consideration of problems of dialect and appropriateness.
- EN 603 LINGUISTICS AND THE ENGLISH TEACHER 3 s.h.
Effects of modern linguistic theory on teaching of English, with special emphasis on reading, composition, stylistic analysis, and dialect interference.
- EN 611 MAJOR WRITERS 3 s.h.
Concentrates on one or two major writers of American or British literature, such as Twain, James, Wordsworth, Keats, etc.

- EN 612 THE AMERICAN RENAISSANCE 3 s.h.
Works of major writers in mid-nineteenth century America.
- EN 613 NATURALISM AND REALISM IN AMERICAN FICTION 3 s.h.
Major American realists and naturalists, 1880-1910, including Twain, James, Howells, Norris, Crane, and Dreiser.
- EN 614 MODERN AMERICAN FICTION 3 s.h.
Special studies in such figures as Dreiser, Anderson, Fitzgerald, Lewis, Dos Passos, and Wolfe.
- EN 615 TWENTIETH CENTURY AMERICAN DRAMA 3 s.h.
Explores the major playwrights and major developments of drama in the twentieth century.
- EN 616 AMERICAN LITERATURE TO 1870 3 s.h.
Major writers in Puritan period, early republic, and other phases up to and including the Civil War.
- EN 617 MODERN AMERICAN LITERATURE (from 1870) 3 s.h.
Study of particular author or group of authors; literary genre, literary movement, restricted period of time, etc.
- EN 631 SEMINAR IN LINGUISTICS 3 s.h.
Concentrates on a specific aspect of linguistics (e.g. sociolinguistics) to provide stimulus for independent study.
- EN 633 THE PSYCHOLOGY OF LANGUAGE 3 s.h.
An introduction to psycholinguistics for the English specialist, treating language as a code, acquisition of language and patterns of normal and aberrant human language behavior.
- EN 672 EIGHTEENTH CENTURY PROSE AND POETRY 3 s.h.
Major figures such as Dryden, Pope, Swift, Johnson, Defoe, Fielding, Sterne, Smollett, Burke, and Godwin.
- EN 673 SEMINAR IN BRITISH DRAMA 3 s.h.
Ranges from medieval to modern drama; a thematic focus may sometimes be used.
- EN 674 BIBLIOGRAPHICAL METHODS IN ENGLISH 3 s.h.
Practical training in special methods and materials of research in English. Required of all majors in English except those taking the PhD in Rhetoric/Linguistics. Should be taken early in the program.
- EN 677 SEMINAR IN SHAKESPEARE 3 s.h.
Emphasis on individual study and research in primary and secondary sources.
- EN 678 SEMINAR IN THE BRITISH NOVEL 3 s.h.
Focuses on novels of a given century; a thematic focus that ignores time divisions is sometimes used.
- EN 681 SPECIAL TOPICS 3 s.h.
Courses relating to specialized interests in literature, rhetoric or linguistics which fulfill special needs or interests. May become permanent course offerings.
- EN 684 MODERN POETRY 3 s.h.
Study of Modern British or American or European poetry, or any combination of them.

EN 685 CRITICISM

Major statements of critical theory from Aristotle onward. Aims are both historical and aesthetic.

EN 686 BLACK LITERATURE IN AMERICA 3 s.h.

Chronological study of Black American writing for students who have had little introduction to Black literature. Emphasis on twentieth century.

EN 687 LITERATURE AND THE FILM 3 s.h.

Explores relationship between film and literature and the influences that each has had on the other.

EN 689 ORIENTATION AND FIELD EXPERIENCE IN THE COMMUNITY COLLEGE 3 s.h.

Examines the community college from historical and philosophical perspectives. Includes observations of classes and interviews with staff at community colleges. Specifically for students preparing for careers in the community college. To be taken early in the program.

EN 692 SEMINAR IN TEACHING BASIC COMMUNICATION SKILLS 3-6 s.h.

Instructs students in teaching of reading or of writing to adults. Reading/writing taught in alternate semesters.

EN 693 SEMINAR IN TEACHING ENGLISH IN THE SECONDARY SCHOOL 3 s.h.

Explores recent development in teaching of language, composition, and literature.

EN 698 INTERNSHIP 3-12 s.h.

Practical experience in the student's area of interest, working under professional supervision on the job. Special permission only, dependent upon needs of student's program as well as personal and academic qualifications.

EN 699 INDEPENDENT STUDY 1-3 s.h.

Study of depth of topics not available through regular course work. Student works with supervising professor on carefully planned, student-initiated project. Prior approval necessary.

EN 850 THESIS 1-6 s.h.

EN 950 DISSERTATION 1-12 s.h.

NOTE: Special Topics in Language and Literature, and Major Writers, as well as all seminars, may be scheduled more than once, because subject matter will change with each offering of the course. More complete course descriptions available from the department.

FOOD AND NUTRITION

The Master of Science Degree Program in Food and Nutrition is designed to increase the student's depth of knowledge in food and nutrition, continue professional growth through development of leadership ability, and increase the student's capacity for independent action in scholarly and professional pursuits. It may also lead to fulfilling the requirements for the American Dietetic Association registration. Courses in intermediate nutrition and biochemistry are required for entrance into the program. A faculty

advisor will be assigned to each student. Prospective students apply for admission through The Graduate School. Applicants are then referred to the Food and Nutrition Department Graduate Studies Committee for acceptance. All relevant transcripts and letters of recommendation must be on file with the Graduate School prior to any department decision. At the completion of 15 hours of graduate course work including a research course as well as statistics, all Food and Nutrition majors must qualify for degree candidacy. Qualification for degree candidacy means that the student has successfully taken and passed a qualifying examination.

University Requirements: Elements of Research, 3 s.h. and Statistics I, 3 s.h. are required of all students. Thesis, 4 s.h. is optional. With thesis, 30 s.h. are required; without thesis, 33 s.h. are required for graduation.

Department Requirements: All students must choose 14 s.h. from courses: FN 544, FN 613, FN 611, FN 642, FN 645, FN 646.

University Core: All students may elect 4-10 s.h. from the IUP Graduate Catalog with approval of their adviser.

COURSE DESCRIPTIONS

FN 510 FOOD, NUTRITION AND AGING 3 s.h.

How food relates to health maintenance and special dietary problems during the middle and later years.

FN 544 FOOD COMPOSITION AND BIOCHEMISTRY 3 s.h.

Covers basic chemistry and biochemistry of essential components of food originating from plant and animal sources. Prerequisite: CH 355.

FN 547 NUTRITIONAL ASPECTS OF FOOD PROCESSING 3 s.h.

Studies current known effects of food processing techniques on the nutritional value and safety of food. Prerequisites: FN 212, BI 241.

FN 558 ADVANCED HUMAN NUTRITION I 3 s.h.

Nutritional needs and problems occurring during pregnancy, infancy, early childhood, adolescence and aging. Prerequisites: FN 212, CH 355, BI 151.

FN 561 MICROWAVE COOKING TECHNOLOGY 3 s.h.

Examines the electronic technology, selection, care and use of the microwave oven. Basic physical and chemical concepts related to microwave cooking. Individual research problem required. Two lectures, two lab hours per week.

FN 611 NUTRITION IN THE LIFE CYCLE 3 s.h.

Studies body functions at different stages of development under differing environmental conditions and at various levels of biological organization.

FN 641 CULTURAL ASPECTS OF FOODS 3 s.h.

Investigation and analysis of historical, political, religious, ethnic, environmental, and social influences affecting food habits and customs. Major cuisines of the world and regional U.S. are included.

FN 642 CONTEMPORARY ISSUES IN FOOD AND NUTRITION 3 s.h.

Current information in foods and nutrition is investigated, analyzed and evaluated for practical implementation.

FN 643 SEMINAR IN CLINICAL DIETETICS 3 s.h.

Examines nutritional management of the hospitalized patient with emphasis on the role of the dietitian. Research for a paper and seminar presentation required.

**FN 645 PROTEINS, CARBOHYDRATES AND FATS
IN NUTRITION**

3 s.h.

Nutritional considerations of protein, carbohydrates and fat metabolism. In vitro and in vivo analysis as well as physiologic and biochemical function of these nutrients.

FN 646 VITAMINS AND MINERALS

4 s.h.

Biochemical role of vitamins and minerals as co-factors in macronutrient metabolism. Focus on biochemical and physiologic functions, research, and analytical methods. Prerequisite: FN 645.

FN 652 INTERNSHIP

1-6 s.h.

Supervised work experience for Food and Nutrition majors. Permission: Department Chairperson.

New courses, FN 612, Administration of Food Service Systems, 3 s.h.

FN 613, Seminar in Food and Nutrition, 1 s.h.

FN 699, Independent Study in Food and Nutrition, 1-3 s.h.,

are pending approval.

FOREIGN LANGUAGES *

GERMAN

The programs leading to the MA and MEd degrees in German have a number of goals in common and overlap in several areas. Both programs seek to improve the candidate's proficiency in German and to increase the student's knowledge of German culture and civilization. While sharing common aims, each program is flexible enough to be tailored to the individual candidate's purposes and desires for pursuing graduate study.

A minimum of 30 semester hours of graduate work is required, including three s.h. of Elements of Research (GR 615) for the MEd. The thesis is optional (0-six s.h.). The remainder of the courses is to be taken in areas directly related to the student's main field of study. All candidates for advanced degrees in German will also demonstrate their achievement and proficiency by successfully passing comprehensive oral and written examinations on all graduate work in German completed at IUP.

Candidates for the Master of Arts degree must earn a minimum of 18 s.h. of credit in German courses (GM 610 through GM 653) and provide evidence of proficiency in a second foreign language. Candidates for the Master of Education degree must earn a minimum of 15 s.h. in German courses and successfully complete one course in the area of Foundations of Education.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

Duisburg program: IUP students can take up to 10 credits at the University of Duisburg in the Federal Republic of Germany.

*Potential applicants should discuss with the Graduate School the availability of course offerings in the foreign languages before submitting an application for admission.

COURSE DESCRIPTIONS

GM 610 HISTORY OF THE GERMAN LANGUAGE 3 s.h.

History and development of German language, with special emphasis on relationships with English. Analysis of annals in Gothic, Old High German, and Middle High German using methods of historical and contemporary linguistics.

GM 611 ADVANCED COMPOSITION & STYLISTICS 3 s.h.

Development of abilities in German composition and stylistics which will lead to greater facility and accuracy in writing German.

GM 612 ADVANCED ORAL PRACTICE 3 s.h.

Designed to achieve fluency and accuracy in spoken German by using various media to provide framework for guided discussions of current topics.

GM 613 GERMAN PHONETICS 3 s.h.

Analysis of physiological and linguistic factors of spoken German. Practice on critical areas of German pronunciation and intonation, with special emphasis on potential interferences between German and English.

GM 620 SEMINAR ON GERMAN LANGUAGE 3 s.h.

In-depth study of structure and grammar of the language.

GM 630 SEMINAR ON GERMAN CULTURE 3 s.h.

In-depth study of German culture from either an historical, fine arts perspective or from an anthropological, sociological point of view. Independent research with oral and/or written reports required.

GM 640 SEMINAR ON GERMAN LITERATURE 3 s.h.

In-depth study of particular author, or genre requiring independent research. Seminar topics to vary on a rotating basis, depending on staff and student interest.

GM 653 ADVANCED METHODOLOGY 3 s.h.

Demonstrations and discussions of current teaching strategies to provide teachers of German with greater expertise in dealing with problem in motivation, articulation and other pedagogical concerns. Topics vary from time to time, depending on background and experience of participants involved.

GM 699 INDEPENDENT STUDY 1-3 s.h.

SPANISH

The Spanish Division of the Foreign Languages Department offers programs of study leading to either the Master of Arts or the Master of Education degree in Spanish Language and Literature. The MA degree is recommended to those who plan to pursue studies towards the PhD degree. The MEd degree in Spanish Language and Literature is designed especially for those who plan a career as secondary school teachers or those already employed as teachers in a school system. Geared to both full and part-time students, since its inception in 1966, the program has served more than 100 graduate students.

MASTER OF ARTS IN SPANISH LANGUAGE AND LITERATURE

Candidates for the MA degree in Spanish Language and Literature must successfully complete a minimum of 30 s.h. of which at least 24 s.h. are to represent the area of concentration as well as a minimum of four different literary epochs chosen from courses in Peninsular and/or Spanish American literature. Required courses for the MA degree are: SP 600 or SP 601 and SP 606. Thesis is optional; if the candidate chooses the "No Thesis" option, he/she must complete 33 s.h. with a minimum of 27 s.h. in the area of concentration. For admission to degree candidacy the student must demonstrate a reading knowledge of a second foreign language acceptable to the department.

MASTER OF EDUCATION IN SPANISH LANGUAGE AND LITERATURE

Candidates for the MEd degree in Spanish Language and Literature are required to successfully complete 30 s.h. with distribution as follows: A minimum of 15 s.h. in Spanish area studies which must represent courses chosen from at least three different literary epochs in Peninsular and/or Spanish American literature. One course in Foundations of Education (three s.h.) to be selected from among: FE 611, 612, 613, 514. One course (three s.h.) to be chosen from among the following Behavioral Studies: EP 604, EP 573, EP 576, EP 578, EP 580, CE 629, CE 639 or EX 631. GR 615 Elements of Research is required of all students in the MEd program. Two courses or six s.h. from among the following: FE 515, CM 600, SP 605. Required courses in Spanish are: SP 600 or SP 601 and SP 606. If the student chooses the "No Thesis" option, he/she must then complete 18 s.h. in Spanish or a total of 33 s.h. For admission to degree candidacy the student must demonstrate a satisfactory reading knowledge of a second foreign language acceptable to the department.

For description of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX course, SPECIAL EDUCATION; and CM course, COMMUNICATIONS MEDIA.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

Curriculum for the MA and MEd Degrees in Spanish Language and Literature

- I. Spanish Language and Literature (Area of Concentration) Courses SP 600 through 699 provide subject matter content in the area of specialization for both the Master of Arts and the Master of Education degrees. MA candidates are to complete 24 to 30 s.h. and MEd candidates a minimum of 15 to 18 s.h. chosen from these courses some of which represent required courses. FL 525 Valladolid Program for which six s.h. will be allotted is optional provided that the candidate has not elected the Valladolid program as an undergraduate.

II. Related Studies

A limited number of graduate credits may be elected from related areas of study with departmental approval.

COURSE DESCRIPTIONS

FL 521 LANGUAGE AND SOCIETY 3 s.h.

Salient facts of language and its fundamental role in development and continuity of society and culture, including language families and their characteristics, factors of linguistic change and development, reciprocal influences of culture and language, linguistic borrowing, psycholinguistics, and systems of writing. (Open to majors and non-majors).

FL 525 FOREIGN STUDY — VALLADOLID (Optional) 6 s.h.

Intensive study of Spanish language and culture at the University of Valladolid, Spain, from approximately January 7 to May 30. For detailed description consult the IUP publication "The Pennsylvania-Valladolid Study in Spain Program."

SP 580 FOREIGN STUDY — JALAPA (Optional) 1-3 s.h.

Intensive study of Spanish language and Mexican culture at the University of Veracruz in Jalapa, Mexico, from approximately July 7 to August 20. Credits subject to approval of the Director of the Program.

Hispanic Graduate Studies

Series 600-605: Philology, Stylistics, Grammar and Methodology

SP 600 HISTORY OF THE SPANISH LANGUAGE 3 s.h.

Traces phonological, morphological, lexical and syntactical evolution of Castilian dialect from its origins in Vulgar Latin through its development, perfection and ultimate recognition as the official language of Spain and Spanish America. Places Castilian linguistically with relation to other Romance Languages and considers features peculiar to Spanish of Latin America.

SP 601 ADVANCED GRAMMAR, COMPOSITION AND CONVERSATION 3 s.h.

Advanced grammar, composition and oral fluency intended to substantially improve understanding of Spanish grammar and syntax, increase vocabulary and command of language, and to provide opportunity for acquisition of poise and ease of self-expression.

SP 605 METHODOLOGY OF FOREIGN LANGUAGE TEACHING 3 s.h.

Improvement of teaching skills and an increased understanding and awareness of implications of current research to foreign language teaching and learning theory as well as development of strategies for testing and evaluation of student learning and exploration of curricular innovations.

SP 606 METHODS OF RESEARCH, CRITICISM, AND STYLISTICS 3 s.h.

Acquaints students with tools of research in the field, MLA style sheets, histories of literature, historical grammars, dictionaries, literary criticisms, recognized collections of literary texts, critical editions and monograph studies as well as various scholarly journals devoted to romance philology and literatures. Introduction to history of Spanish literary criticism and to stylistics as a tool of literary analysis applied to representative works of various epoch styles.

Spanish Peninsular Literature

Series 610-650

SP 610 MEDIEVAL SPANISH LITERATURE 3 s.h.

Reading and discussion of various medieval genres: epic poetry ("Juglaría" and "clerecía"); lyric and didactic poetry; prose (Alfonso X and selections from the *Crónica General*, the *Partidas*, the *Cántigas*, etc.; Juan Manuel and the *Apólogo*); *Danza General de la Muerte*, the debate and the medieval drama.

SP 615 PHOTO-RENAISSANCE LETTERS AND MASTERPIECES 3 s.h.

Critical appreciation of transitional literary forms of XV century Spain; poetry and the *Cancioneros* and the *Romancero*; prose (history, biography and satiric-didactic literature, apoloques). Special emphasis on *Libro de buen amor* and *La Celestina*.

SP 620 RENAISSANCE AND HUMANISM 3 s.h.

Consideration of cultural contributions of Spanish Christian Humanism together with a careful study of Renaissance lyric poetry (Italianate and traditional veins); the epic; the novel (in its various forms); Pre-Lopesque theater; the dialogue; ascetic and mystical prose and poetry; history.

SP 625 THE SPANISH BAROQUE 3 s.h.

An insight into typical Baroque themes, motifs and stylistic devices through analysis and interpretation of important works of XVII century authors. Poetry (lyric and epic); prose (novel and novella); literary criticism and polemics; drama.

SP 626 GOLDEN AGE DRAMA 3 s.h.

Readings and interpretations of major dramatists (Lope and Calderón) and examination of XVII century drama, its peculiar national character, and its relationship to contemporary society and culture.

SP 630 NEOCLASSICISM AND ROMANTICISM 3 s.h.

Compares and contrasts cultural and ideological expression of XVIII century Spain—both French cultural influence and popular reaction to the trend—as manifested in the prose (polemic, erudite, narrative and philosophic), poetry and theater of the period to artist and literary aesthetics of the first half of XIX century Spain as reflected in poetry, novel, drama and literary perceptive of her imported Romanticism together with an appreciation of the late romantic Becquer.

SP 635 COSTUMBRISM, REALISM AND NATURALISM 3 s.h.

Studies and analysis of "Artículos de costumbres" and especially several trends in the novel of latter half of the XIX century in Spain: Fernán Caballero, Alarcón, Valera, Pereda, Palacio Valdés, Pardo Bazán, Blasco Ibañez, Clarín and Pérez Galdós.

SP 640 GENERATION OF 1898 3 s.h.

A critical excursion into minds of the last XIX and early XX century novelists and thinkers and their works. Emphasis on novels and essays of Unamuno, Gaiet, Azorín, Baroja, Valle-Inclán, Ortega y Gasset and Pérez de Ayala.

SP 646 MODERNISM, CONTEMPORARY AND POST-CONTEMPORARY POETRY 3 s.h.

Study and analysis of lyric poetry in Spain from Modernism and its evolution to present.

SP 650 SPANISH LITERATURE OF THE XX CENTURY 3 s.h.

Trends in Spanish Novel after Civil War. A) 1940-1961: "Tremendismo" and testimonial novel; Social Realism and Objectivism. B) 1962 to present: reaction against Social Realism and Objectivism; new tendencies. C) short story. D) study and interpretation of Spanish theater from generation of 1898 to present.

Spanish American Literature and Culture

- SP 581 SPECIAL TOPICS** 3 s.h.
Study of an author, genre, epoch or literary movement.

Series 655-699

- SP 655 PRE-COLUMBIAN LITERATURE AND SPANISH AMERICAN CIVILIZATION** 3 s.h.

Literature, art, myth and thought of Indian civilizations of Latin America with emphasis on Aztecs, Mayas and Incas as well as history and culture of Spanish America. Spanish American character, traditions and ideology from its origins to the present.

- SP 660 COLONIAL PERIOD** 3 s.h.

Representative chroniclers, poets and dramatists from the letters of Columbus to end of the XVI century together with a study of various literary genres during the XVII and XVIII centuries in Spanish America with special emphasis on Baroque and Neoclassical trends.

- SP 665 ROMANTICISM AND GAUCHESQUE LITERATURE** 3 s.h.

A detailed study of the Romantic period, its European influences and unique characteristics of Romanticism in Spanish America with representative poets, novelists and essayists read against the XIX century historical background. Development of Gauchesque genre in Argentina and its characteristics, interrelated with the geographical, historical and social background with emphasis on Gauchesque poetry.

- SP 670 MODERNISM** 3 s.h.

Modernistic movement of Spanish American literature history, and its relation to certain European artistic trends and movements. Aesthetic principles of modernism together with its renovation in themes, vocabulary, syntax and versification will be seen as reflected in the criticism and works of the movement's outstanding authors.

- SP 675 POST-MODERNISM AND AVANT-GARDE POETRY** 3 s.h.

A study of the reaction against modernism as characterized by new techniques of post modernistic poetry, followed by an analysis of historical and socio-cultural situation of "avant-garde" movements. Discussion of characteristics of works of major Spanish American "avant-garde" poets.

- SP 680 REGIONALISTIC NOVEL** 3 s.h.

A study of the "maestros" of Spanish American regionalism of the early XX century, including novelists Gallegos, Rivera, Azuela, Güiraldes, Icaza, Alegria, etc.

- SP 685 XX CENTURY SPANISH AMERICAN LITERATURE** 3 s.h.

Literary expressions in Spanish America from end of the XIX century to present.

- SP 690 CONTEMPORARY NOVEL AND SHORT STORY** 3 s.h.

Major contemporary novelists and short-story writers (Borges, Onetti, Cortázar, Carpentier, Rulfo, García Márquez, etc.), with an examination of their major themes, techniques and stylistic features.

- SP 695 THE SPANISH AMERICAN ESSAY** 3 s.h.

Development of theory and ideological essay from the last two decades of the XIX century to present with stress on contemporary period. Essays will be read both as a literary genre and as a vehicle of ideas against the historical background.

- SP 699 INDEPENDENT STUDY** 1-3 s.h.

FOUNDATIONS OF EDUCATION

The Foundations of Education Department seeks to expose its students to a systematic inquiry into educational theories and practices through a philosophical, sociological, historical, and comparative analysis. Foundations study generates criteria for judgment and helps to formulate a Gestalt of various subjects. It also helps to develop an integral cross sectional view of education, while augmenting the construction, clarification, and evaluation of educational goals necessary for development of effective methods of instruction. Furthermore, it broadens perspectives and deepens analysis of policies and programs which help educational personnel find meaning and value in all educational activities.

COURSE DESCRIPTIONS

FE 514 COMPARATIVE FOUNDATIONS OF EDUCATION 3 s.h.

Educational theories and practices in different nations will be studied. Educational purposes, curriculum, methods, administration, school systems, teacher education, and other educational features in America and those in other nations, will be analyzed, evaluated, and compared.

FE 515 CURRICULUM DEVELOPMENT 3 s.h.

Analysis of philosophical, sociological, and psychological basis for creation of curriculum patterns. K-14. Includes utilization of technological devices, critical examination of basic concepts underlying determination of objectives, selection, and organization of subject matter and learning experiences in general. Current curriculum research will be analyzed, as will existing instructional materials and programs.

FE 595 INTERNATIONAL EDUCATION STUDIES PROGRAM 3 s.h.

A travel-seminar conducted in a foreign country and designed to afford educators and students of education the opportunity to investigate teaching-learning process in cultural settings other than their own. Particular attention to such current educational issues as theories of curriculum development, methodology, teacher education, and changing value systems.

FE 611 HISTORICAL FOUNDATIONS OF EDUCATION 3 s.h.

Study of historical development of American education. European influences on philosophies and practices of American schools will serve as a background. Emphasis on development of education in America as influenced by various individuals and schools of thought. Historical trends will be related to current problems and practices in education.

FE 612 PHILOSOPHICAL FOUNDATIONS OF EDUCATION 3 s.h.

Analysis and evaluation of basic philosophies and their impact upon education. Nature, value, means and ends of education and some other fundamental phases of schooling will be thoroughly examined. Stress on essentials enhancing and individual working philosophy of education; basic ideas heightening a sound philosophy for American schools.

FE 613 SOCIAL FOUNDATIONS OF EDUCATION 3 s.h.

Social and cultural forces which influence education. Particular stress on current problems as they relate to entire educational system and to curricular problems and practices in today's schools.

FE 616 PROFESSIONAL NEGOTIATIONS IN EDUCATION

3 s.h.

Study dimension of professional negotiations process in educational sector. Instructional tools will be case studies, lecture-discussion and reading assignments. Guidelines of public policy affecting public employer-employee relations will also be evaluated and analyzed.

FE 699 INDEPENDENT STUDY

1-6 s.h.

GEOGRAPHY AND REGIONAL PLANNING

IUP's Department of Geography and Regional Planning offers graduate programs leading to the degrees of Master of Arts, Master of Science, and Master of Education. The programs are designed to prepare students for a variety of careers as geographers in business, government, research and planning organizations, and teaching; or for entry to a doctoral program at another university. Emphasis is placed upon developing professional competence in the tools, substance, methodology, and theory of geography.

Graduates of the program are employed by the state and federal government, city, county and regional planning commissions, private consultant firms, business and industry, and secondary schools, colleges and universities. Knowledge of spatial location patterns and processes and environmental concerns; the planning field, its organization, and operation; and geographic and cartographic skills, including computer application is of value to the graduate in the job search.

Students usually hold a bachelor's degree in geography or one of the social sciences. Persons with degrees in education, science or business find a degree in geography of value.

Geography graduate students at IUP may pursue traditional geographic themes of study or research such as economic-urban and cultural-historical geography. The Department also offers faculty strength in regional development and planning, and in cartography/remote sensing/geographic information systems. Thus, the student may choose between two plans. The MA student may design his or her own program in consultation with a faculty advisor. The MS program requires that the student complete a twelve-credit concentration in regional development, planning, and cartography. In either program selected courses in related fields may be applied toward a degree. All graduate degree programs require a minimum of 30 semester hours of credit for the thesis option, or at least 36 hours for the non-thesis option. These include three core courses: GE 511, GE 610 and GE 612. Graduate students have the option to incorporate an internship as a part of either the MA or the MS program.

MASTER OF ARTS AND MASTER OF SCIENCE IN GEOGRAPHY

- I. Core Program (nine s.h.): Thought and Philosophy in Geography and Planning; Research in Geography and Planning; Quantitative Techniques in Geography and Planning.
- II. Electives and/or Thesis (21-27 s.h.)

- A. The MA candidate elects 15-20 s.h. in geography and related fields with the thesis (one to six s.h.) and 27 s.h. without thesis.
- B. The MS candidate takes a concentration in regional development, regional planning and cartography (12 s.h. minimum), elects three to nine s.h. in geography and related fields with thesis (one to six s.h.) and 15 s.h. without thesis. Six s.h. in internship may be included.

MASTER OF EDUCATION IN GEOGRAPHY

- I. Professional Development Area: (nine s.h.) Humanistic Studies (three s.h. from the following): FE 611; FE 612; FE 613; FE 514; Behavioral Studies (three s.h. from the following): EP 604; EP 573; EP 576; EP 578; EP 580; CE 629; CE 639; EX 631; Research (three s.h. required of all students): GR 615.
- II. Specialization Core (six s.h. from the following list): FE 515, CM 600, GE 670.
- III. Subject Area and/or Thesis: 15 s.h. in geography.

For description of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX courses, SPECIAL EDUCATION; for CM course, COMMUNICATIONS MEDIA.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

COURSE DESCRIPTIONS

- GE 511 THOUGHT & PHILOSOPHY IN GEOGRAPHY & PLANNING 3 s.h.
History of the disciplines, great ideas, leading professionals, and unresolved issues are studied.
- GE 513 CARTOGRAPHY 3 s.h.
Develops ability to map and diagram human and environmental phenomena. Special maps, charts, and diagrams will be considered as required by students. Recommended for all master's candidates.
- GE 514 MAP & PHOTOGRAPH INTERPRETATION 3 s.h.
Develops skill in extracting information and synthesizing data from maps and aerial photographs as applied to geologic, land use, economic and transportation problems.
- GE 515 REMOTE SENSING 3 s.h.
Methods of remote sensing such as thermal sensing, multi-spectral scanning, satellite imagery, side-looking airborne radar imagery, and additive color analysis and their applications, particularly as applied to geographic and planning problems are studied.
- GE 610 RESEARCH IN GEOGRAPHY & REGIONAL PLANNING 3 s.h.
Elements and techniques of scientific research, as applied to geographic and planning problems, are studied. A research proposal is developed.

**GE 612 QUANTITATIVE TECHNIQUES IN GEOGRAPHY
AND PLANNING**

3 s.h.

Descriptive and inferential statistical techniques applied to spatial distribution and spatial association of physical and cultural phenomena and testing of spatial theoretical constructs.

GE 617 FIELD TECHNIQUES IN GEOGRAPHY AND PLANNING

3 s.h.

Field techniques are evaluated. Field tools and techniques are used in the study of a specific area. Emphasis is upon skill and interpretation of spatial patterns of phenomena.

GE 620 SPATIAL STRUCTURE OF THE ECONOMY

3 s.h.

The spatial organization of economic systems is studied. Various processes that give rise to these systems and their spatial interdependencies will be explored. Some topical and regional examples of spatial structure will be used as case studies.

GE 622 INDUSTRIAL GEOGRAPHY

3 s.h.

Spatial aspects of industry are considered. Emphasis is placed on the locational patterns of industry.

GE 623 REGIONAL DEVELOPMENT

3 s.h.

Theory of and the policy implications of the spatial aspects of development in various regions of underdevelopment.

GE 630 CULTURAL GEOGRAPHY

3 s.h.

Literature and methods of cultural geography. Topics include population, settlements, human ecology, culture areas, and related features.

GE 531 POPULATION GEOGRAPHY

3 s.h.

Spatial variations in numbers, characteristics and dynamics of human population, models and theoretical constructs relevant to demographic structures and processes are studied.

GE 532 URBAN GEOGRAPHY

3 s.h.

Analysis of city types, patterns and functions as influenced by geographic conditions and other factors. City planning techniques and field study are utilized.

GE 633 SETTLEMENT GEOGRAPHY

3 s.h.

Settlement patterns and processes; origins, diffusion, classification, pioneer, settlement planning, and agricultural colonization.

GE 534 POLITICAL GEOGRAPHY

3 s.h.

Geographic factors and conditions are analyzed as they relate to character and function of states. Political institutions are evaluated in light of geographic conditions.

GE 540 CONSERVATION: ENVIRONMENTAL ANALYSIS

3 s.h.

Problems of exploitation and utilization of regional resources, i.e., soils, minerals, forests, and wildlife in relation to population growth and regional planning and development.

GE 650 REGIONAL GEOGRAPHY

3 s.h.

Various regions of the world may be dealt with, such as Latin America, Africa, or South Asia when there is sufficient student demand. Physical, environmental, cultural, and population patterns are considered.

GE 651 GEOGRAPHY OF PENNSYLVANIA

3 s.h.

Regions of Pennsylvania are examined in detail to identify man-environment relationships. Soils, topography, climate, vegetation, population and economic patterns are studied.

GE 560 INTRODUCTION TO PLANNING 3 s.h.

Introduction to field of planning on city, metropolitan, regional and county levels. Included are: intergovernmental context and legislative basis for planning; the comprehensive plan; plan implementation; and the planning agency.

GE 561 PLANNING: BASIC STUDIES & ANALYSIS 3 s.h.

Research, analytical design and plan-making techniques in urban and regional planning. Examines basic items necessary to prepare urban and regional comprehensive plans. Prerequisite: GE 560.

GE 562 PLANNING: DEVELOPMENT OF PRINCIPLES & THEORY 3 s.h.

Examines process of city planning during ancient, medieval, renaissance and modern periods. A review of early planning in America, as well as present city planning is included. Prerequisite: GE 560.

GE 563 PLANNING: DESIGN 3 s.h.

Presents concepts of city, subdivision and transportation design in relation to topography, natural resources, and other physical elements. Prerequisite: GE 560.

GE 564 LAND USE POLICY 3 s.h.

Basic concepts of land use policy at the national, regional, county and local levels are treated. Analysis is made of the various land use policies.

GE 665 PLAN IMPLEMENTATION 3 s.h.

Considers zoning, improvement programs, housing codes, building codes methodology and application of administrative procedures, federal and local urban renewal programs, site selection, program administration. Prerequisite: GE 560.

GE 581/681 SPECIAL TOPICS 3 s.h.

Topical courses offered on an experimental basis. Check department schedule for these offerings.

**GE 670 PROFESSIONAL PROBLEMS IN
GEOGRAPHIC EDUCATION 3 s.h.**

Classroom problems and discussion centered about new viewpoints in geography. Individual reports, group discussion and research included.

GE 680 SEMINAR 3-6 s.h.

Seminars on various topics will be offered occasionally. Topics might be new trends in planning, cartographic theory or spatial aspects of service industries.

GE 698 INTERNSHIP 3-12 s.h.

Professional learning experience with emphasis on practical applications of academic background. Open to students who have completed at least 12 s.h. of graduate work with a minimum of 3.0 GPA. Six s.h. only applicable to degree programs.

GE 699 INDEPENDENT STUDY 1-6 s.h.

Independent research and study under faculty directions. Interested students should apply to director of graduate studies.

GE 850 THESIS 3-6 s.h.

Registration for thesis must be approved by the department's graduate coordinator and chairperson ahead of time.

GEOSCIENCE

The Master of Arts Degree Program in Geology is presently inactive. Graduate level geoscience courses will continue to be offered for those students who can utilize them as electives in other degree programs or who desire to supplement their undergraduate training.

COURSE DESCRIPTIONS

GS 511 SEDIMENTARY PETROLOGY 3 s.h.

Determination and interpretation of grain size parameters; an introduction to clays and clay mineralogy; hand lens and petrographic microscope study of marine phosphorites, carbonates, siliceous sediments, heavy minerals, and sandstones with emphasis on interpreting ancient depositional environments. GS 321

GS 512 STRATIGRAPHY 3 s.h.

Study of layered rocks with emphasis on the guiding principles of stratigraphy, the evaluation of unconformities, the principles and problems of correlation, and selected stratigraphy problems. GS 411

GS 520 PENNSYLVANIA GEOLOGY 3 s.h.

Diversity and abundance of geologic phenomenon within the state will be used to apply basic geologic concepts of time, rock types and structures and geomorphic processes. Extensive field trips will be an integral part.

GS 522 IGNEOUS & METAMORPHIC PETROLOGY 3 s.h.

Study of rock phyla and their chemical and spatial relationships in the earth. Special attention of the genesis, mineral composition, and classification of rock types. Ecology of igneous, sedimentary, and metamorphic rocks is studied in detail. GS 321

GS 524 GLACIAL GEOLOGY 3 s.h.

Study of phenomenon of glaciation, including study of glacial movement, glacial deposits, and an investigation of possible causes of glaciation. A working acquaintance with glacial land forms is provided by means of field trips to glaciated regions of NW. Pennsylvania. GS 121 and GS 131

GS 526 STRUCTURAL FIELD GEOLOGY 3 s.h.

Includes techniques of geologic field work such as measuring sections, use of aerial photographs, and a field project involving compilation of a geologic map, cross sections, and geologic report. GS 325

GS 527 GEOMORPHOLOGY 3 s.h.

Landforms and processes and principles that govern both their origin and their subsequent development. GS 325

GS 530 PALEONTOLOGY 3 s.h.

A morphological study of major invertebrate life forms of geologic past and their distribution in space and time. GS 131 or BI 120

GS 535 ECONOMIC GEOLOGY 3 s.h.

Study of earth's metallic and non-metallic mineral resources with regard to processes of formation, methods of extraction (mining and drilling methods), methods of treatment, uses, and economic and environmental factors. GS 321

GS 536 GEOLOGY OF THE NORTHERN ROCKIES 3 s.h.

A field study of the major geologic features and relationships involved in the development of the northern Rocky Mountains. National Park and Monument areas of South Dakota, Wyoming, and Montana are included among the areas investigated. Permission of instructor

GS 540 PETROLEUM GEOLOGY 3 s.h.

An introduction to the geology of petroleum, its origin, migration, entrapment and production. The laboratory is designed to provide practical experience in subsurface mapping techniques and the use and evaluation of geophysical logging devices. Minimum 20 credit hours of Geology

GS 541 THE SOLAR SYSTEM 3 s.h.

Characteristics and behavior of planets and their satellites, asteroids, meteors, comets, and other phenomena of the solar system. One of the major topics will investigate and criticize several of the theories of its origin. It will require some treatment of celestial mechanics. MA 121 and PY 111

GS 542 THE SIDEREAL UNIVERSE 3 s.h.

Characteristics and classification of the stars, their assemblage in groups and galaxies, and their evolution. Techniques of gathering data are examined to gain an understanding of the role of the telescope, spectroscope, and photometer in astronomical research. Lab exercises and night observations are a part of the course. Credit will be given only to those for whom the course represents an area of study for which credit has not previously been recorded. MA 121 and PY 111

GS 543 CARBONATE GEOLOGY FLORIDA 3 s.h.

Two weeks of field study in Florida Keys. Will be conducted from base camp in Florida Keys and will consist of both land and water work as the different carbonate environments in the Keys, Florida Bay, and the Atlantic reef tract are studied.

GS 550 OPERATION OF THE PLANETARIUM 1-2 s.h.

Designed to acquaint student with the operation and use of the Spitz Planetarium. A satisfactory instructional program or show for a public group will demonstrate accomplishment of course objectives. GS 110 or GS 341 or GS 342

GS 561 PHYSICAL OCEANOGRAPHY 3 s.h.

Introduction to physical, chemical, geological and biological nature of ocean; topography, submarine geology, and bottom deposits. PY 111 and MA 121

GS 562 MARINE GEOLOGY & PLATE TECTONICS 3 s.h.

A continuation of physical oceanography. Emphasis upon marine geology, coastal geomorphology, and structure and sedimentary environments of the continental shelf, slope and ocean basin. PY 111, PY 112, and Geology courses

GS 571-572 METEOROLOGY I and II 3-6 s.h.

Basic and advanced considerations of physical processes of the atmosphere. Lectures, readings, term paper, lab. One year of Physical Science or Physics GS 581.

GS 681 SPECIAL TOPICS 1-3 s.h.

As student demand and circumstances may dictate, special graduate courses may be offered by any member of the geoscience graduate faculty.

GS 614 CARBONATE PETROLOGY 3 s.h.

Involves the study of ancient and recent limestones and dolomites. Topics include classification, recognition of constituents of calcareous rocks, cementation processes, and diagenesis of calcareous deposits.

GS 619 CRYSTALLOGRAPHY

3 s.h.

Designed for the geologist, chemist, or physicist. Minerals are studied utilizing common field and X-ray notation. External and internal morphology is examined. Stereographic projection techniques are applied. Fundamentals of Mathematics plus Mineralogy or Physical Chemistry, or permission of instructor

GS 621 OPTICAL MINERALOGY

3 s.h.

Workshop in study and identification of minerals, theory of mineral formation and structure, and mineral relationships. Simple chemical and physical techniques will be used in mineral identification. Physical Geology or General Chemistry

GS 630 PALEOECOLOGY

3 s.h.

Application of paleontologic, sedimentologic, and geochemical approaches to the interpretation of ancient environments. Field and laboratory research leading to a term paper. GS 330

GS 699 INDEPENDENT STUDY

1-3 s.h.

Independent research and study under faculty direction.

A new course, GS 532 Coal Geology, is pending approval.

HEALTH AND PHYSICAL EDUCATION

The master of science degree in sport sciences is designed to attract students from the non-teaching professions as well as the teaching profession. It is discipline-oriented with provisions for the student to choose between two major areas of emphasis: professional specialization and sport studies. Options for professional specialization are provided in sport management, sports information, sports media, and aquatics administration and facilities management. Options in sport studies are interdisciplinary in nature and tailored to meet individual needs and interests.

Requirements for Admission — To be admitted to the Health and Physical Education Department, the applicant must have completed the requirements for a bachelor's degree from an accredited college or university and fulfill the general requirements for admission to The Graduate School for a master's degree as discussed in this bulletin.

Requirements for Candidacy — Acceptance into The Graduate School permits a student to take course work in the department. If a student wishes to become a degree candidate, he/she must complete the Application to Candidacy and forward this form to the dean of Health Sciences after having successfully completed six hours of course work in the department.

MASTER OF SCIENCE IN SPORT SCIENCES

Students may choose between a thesis or non-thesis curriculum depending upon individual preference and needs.

I. Thesis Degree Requirements (30 s.h.)

A. Core Courses (20-24 s.h.): HP 600, HP 601, HP 602, HP 603, GR 615, GR 516, HP 850.

B. Electives (six-10 s.h.)

Students may, with the advice and consent of an adviser, select electives from any of the approved graduate level courses.

II. Non-Thesis Degree Requirements (36 s.h.)

A. Core Courses (18 s.h.): HP 600, HP 601, HP 602, HP 603, GR 615, GR 516.

B. Electives (18 s.h.)

Three semester hours from HP 631, HP 632, HP 633, HP 634, HP 635, HP 637, HP 680, or HP 681. Fifteen semester hours from any of the approved graduate level courses with the advise and consent of an adviser.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

COURSE DESCRIPTIONS

HP 510 EXERCISE PRESCRIPTION 3 s.h.

The course is designed to teach individuals to write exercise prescriptions based upon a subject's tolerance for physical activity. Special emphasis will be given to risk factors, techniques of evaluation, drugs, injuries, environmental factors, and motivation with respect to their role in physical activity assessment. In-depth experiences, working with qualified medical personnel will be provided. Prerequisite: HP 343, Physiology of Exercise

HP 512 PHYSICAL ACTIVITY AND STRESS MANAGEMENT 3 s.h.

Acquisition of necessary understandings of anxiety and stress with respect to the nature, the place they hold in our society, and the intervention strategies related to physical activity. A paper, relating the utilization of these techniques is required.

HP 513 PHYSICAL ACTIVITY AND AGING 3 s.h.

The goals of the course are to present the major aspects of physical activity, its importance to the older adult, and the organization of an activity program. Specific attention will be given to the physiology of physical activity, effects of activity on growth and aging, exercise prescription, flexibility, overweight and obesity, and motivational strategies. A paper is required that deals with analysis of problems of the aged as observed from visitations to nursing homes, senior citizen organizations, and social service agencies.

HP 550 CURRICULUM AND PROGRAMMING IN
SEXUALITY EDUCATION 3 s.h.

Designed to provide and share information that will be helpful to current and future school personnel in developing sexuality education programs in their schools and local communities.

HP 600 HISTORY OF PHILOSOPHY OF SPORT 3 s.h.

A functional approach to an understanding of sport and human movement during the course of civilization with emphasis on formation of a constructive philosophical approach to present day problems.

HP 601 SPORT AND SOCIETY 3 s.h.

Designed to acquaint the student with the reciprocal relationships between sport and physical activity as it affects man's development in the societies and cultures out of which sport emerges.

HP 602 SPORT PSYCHOLOGY 3 s.h.

Study of the psychological effects and implications of man's participation in sport and physical activity. Emphasis is on personality and motivational dynamics as they relate to sport involvement in human behavior.

- HP 603 PHYSIOLOGICAL BASIS OF SPORT 3 s.h.
An examination of the physiological factors that influence performance in sport with an emphasis on the analysis of various training techniques.
- HP 631 MOTOR LEARNING 3 s.h.
Psychological principles of learning are applied to the learning of motor skills. Focuses on integration of the learning process, the individuality of the learner, and task and instructional procedures.
- HP 632 ASSESSMENT OF HUMAN PHYSIOLOGICAL FUNCTIONS 3 s.h.
Study of various physical fitness components, their contribution to a person's well being and how to measure and evaluate physical fitness.
- HP 633 KINESIOLOGICAL PRINCIPLES 3 s.h.
Scientific study of human motion with particular attention given to analysis of sport techniques and discussion of kinesiological concepts.
- HP 634 CURRENT LITERATURE IN SPORT 3 s.h.
Review of current literature in physical education and sport. Requires the submission of an article for publication.
- HP 635 SPORT MANAGEMENT 3 s.h.
Theory and practice of human management with applications to sport; formal structure of organizations, goal-setting, organizational personality, group processes and leadership styles.
- HP 641 ADMINISTRATION OF AQUATIC PROGRAMS 3 s.h.
Examines the organizational procedures, administrative techniques and practices employed in aquatics with special emphasis on adapted, competitive, instructional, recreational, social and water safety programs.
- HP 642 DESIGN AND OPERATION OF AQUATIC FACILITIES 3 s.h.
Elements and principles of planning, design and operation of swimming pools, water-front facilities and related equipment necessary for the aquatic administrator.
- HP 680 SEMINAR 3 s.h.
Specific subjects will be considered through readings, reports, discussions and guest presenters. A paper will be required. A specific title will be listed in the schedule of classes. May be repeated.
- HP 681 SPECIAL TOPICS 1-3 s.h.
Topics may be considered that are not available through other course offerings. Prerequisite: Permission of instructor.
- HP 690 INTERNSHIP 3-6 s.h.
Prospectus must be presented by the student. Objective is to provide an in-depth experience in an area of interest to the student under guidance of a faculty member and a cooperating supervisor. Prerequisite: Graduate faculty approval.
- HP 699 INDEPENDENT STUDY 1-3 s.h.
Students may study intensively a subject of their interest under the guidance of a faculty member with the appropriate expertise. Prospectus must be presented by the student. Prerequisite: Approval of faculty member, department chairperson, school dean, associate provost.
- HP 850 THESIS 3-6 s.h.

A new course, "Sport Facilities Administration," is pending approval.

HISTORY

The Master of Arts Degree in History is designed to give students both breadth and depth in that academic discipline. As a terminal degree it prepares teachers for the secondary schools and community colleges. Also business and industry are seeking students with social science or humanities majors because of their superior organizational and communication skills.

MASTER OF ARTS IN HISTORY

A minimum of 30 semester hours is required, or 36 semester hours for those electing not to write a thesis. Within these general requirements is a nine semester hour research requirement consisting of HI 614 (or a substitution approved by the department) and a combination of seminars and/or thesis hours. The remaining hours are selected from the subject matter courses. Six semester hours may with approval be from related disciplines. Failure to consult with the department prior to registering for courses may delay the completion of a master's degree.

COURSE DESCRIPTIONS

HI 501 HISTORY OF GREECE 3 s.h.

Will analyze major political, social, economic and cultural developments in ancient Greek civilization from Bronze Age to death of Alexander.

HI 502 HISTORY OF ROME 3 s.h.

Will trace Roman history from early Republic down to fall of Empire. A study of a civilization from its inception to its collapse.

HI 503 MEDIEVAL EUROPE I, 400-900 3 s.h.

History of early Medieval Europe, from decline of Rome to beginnings of High Middle Ages; emphasis on political, social, economic, religious, and intellectual developments.

HI 504 MEDIEVAL EUROPE II, 900-1350 3 s.h.

History of late Medieval Europe, from High Middle Ages to Renaissance period; emphasis on political, social, economic, religious, and intellectual developments.

HI 505 RENAISSANCE AND REFORMATION 3 s.h.

History of Europe from ca. 1250; rise of commercial city, Kings, and pressures on Christian Church to 1600. Some consideration of technology and voyages.

HI 506 EARLY MODERN EUROPE 3 s.h.

Greatness of France under Louis XIV; Sweden; Thirty Years' War, Emergence of modern society; French Revolution.

HI 507 HISTORY OF EUROPE, 1815-1914 3 s.h.

Study of Europe in nineteenth century, with emphasis on the emergence of major thought patterns, Romanticism, Nationalism, Socialism, and Positivism.

HI 508 20TH CENTURY EUROPE 3 s.h.

Political, economic, and diplomatic trends of Europe since 1900, with major emphasis on causes and results of war, and search for security.

- HI 520 HISTORY OF ENGLAND TO 1688 3 s.h.
Survey of growth of English nation, with emphasis on political, social, and economic developments leading to 17th century conflict between Crown and Parliament.
- HI 521 HISTORY OF ENGLAND, 1688-PRESENT 3 s.h.
Survey of growth of England as a democratic constitutional monarchy. Attention directed to colonial America and English-U.S. relations, as well as to imperial expansion and England's role in 20th century world. Cultural history is included.
- HI 522 FRENCH REVOLUTION AND NAPOLEON 3 s.h.
Development of the Grand Monarchy; brief sketch of Old Regime, concentration on the Revolution and Empire, with emphasis on politics, diplomacy, and economics. Readings and brief papers.
- HI 523 MODERN FRANCE 3 s.h.
Investigation of political, cultural, economic, and social developments since 1815. Discussions and readings.
- HI 524 HISTORY OF GERMANY TO 1848 3 s.h.
Study of evolution of German nation from its prehistoric origins, emphasizing medieval and early modern phases to 1848.
- HI 525 HISTORY OF GERMANY, 1849-PRESENT 3 s.h.
Study of development of modern Germany from the Revolution to 1848, including imperial, republican and totalitarian phases, to post-War formation of East and West Germany.
- HI 526 HISTORY OF RUSSIA 3 s.h.
General survey of Russian history, culture, and institutions. Special consideration given to study of historical forces formative of Revolution in 1917.
- HI 527 HISTORY OF SOVIET RUSSIA 3 s.h.
General survey of contemporary Soviet history, culture, and institutions. Special consideration given to study of communist theory and its place in current Russian historiography.
- HI 530 HISTORY OF ISLAMIC CIVILIZATION 3 s.h.
An approach to learning about a non-Western culture; Mohammed, Arabs, Muslims as creators to a great civilization from rise of Islam to 1800; emphasis on cultural institutions and their interrelationships within Middle East.
- HI 531 MODERN MIDDLE EAST 3 s.h.
Survey of changes that have taken place in the Middle East and in Islam since eighteenth century and of contemporary problems in that region.
- HI 540 COLONIAL AMERICA 3 s.h.
Survey of original thirteen states from their inception as colonies within the British empire to 1763, the eve of independence. Attention given to their political development; economic position within the empire; relations with Indians; and evolution of their social, educational and religious life.
- HI 541 THE AMERICAN REVOLUTION 3 s.h.
Study of history of United States from beginnings of revolutionary crisis in 1763 through adoption of the constitution and the administration of John Adams. Special emphasis is given the causes and civil war aspects of the revolution, and the constitutional-political development of the new nation.

HI 542 THE EARLY REPUBLIC 3 s.h.
Survey of United States history from 1783 to 1850, with special attention on constitutional, political, economic and social trends.

HI 543 CIVIL WAR AND RECONSTRUCTION 3 s.h.
Study of failure of American democracy to cope with issues of mid-nineteenth century, followed by political, economic, military, and social developments during War and reconciliation of North and South.

HI 544 HISTORY OF U.S., 1876-1900 3 s.h.
Stresses reaction of various segments of heterogeneous population of rapid industrialization, urbanization, and corporatism of American life and emergence of U.S. as a world power; special attention to formation of new institutions.

HI 545 HISTORY OF U.S., 1900-1929 3 s.h.
Emphasis on political, social, economic, and diplomatic developments in American history between 1900 and 1929.

HI 546 RECENT UNITED STATES HISTORY 3 s.h.
Study of political, economic, and cultural changes in American life since 1929; examines roots of social problems facing us today. Some recent foreign policy trends also studied.

HI 550 HISTORY OF LATIN AMERICA: COLONIAL PERIOD, 1450-1820 3 s.h.
Study of life of people, Indian cultures, conquest by Spaniards and Portuguese, government during Colonial Period, and Wars of Independence.

HI 551 HISTORY OF LATIN AMERICA: NATIONAL PERIOD, 1820-PRESENT 3 s.h.
Study of history of nations which have emerged since independence; emphasis on economic, political, cultural, and social developments of these nations, as well as relations of these nations to others in the Hemisphere.

HI 560 HISTORY OF PENNSYLVANIA 3 s.h.
Emphasizes the cultural, economic, political and social development of our state in its various periods from colonial to today. Special attention given to diversity of Pennsylvania's people, their institutions, and problems.

HI 561 HISTORY OF AMERICAN DIPLOMACY, 1775-1900 3 s.h.
Traces foreign relations of United States from independence to emergence as a world power. Topics concentrate on themes of commercial relations, political isolation, expansion, and debate over imperialism.

HI 562 HISTORY OF AMERICAN DIPLOMACY, 1900-PRESENT 3 s.h.
Treats primarily our 20th century involvement in world affairs and domestic debate over that involvement. Special emphasis will be placed on role of interest groups and increasing power of Executive Department over Foreign Affairs.

HI 563 THOUGHT AND CULTURE IN EARLY AMERICA 3 s.h.
Selected topics in early American intellectual and cultural growth, with emphasis on Puritanism, Enlightenment, Cultural Nationalism, and Romantic Movement.

HI 564 THOUGHT AND CULTURE IN MODERN AMERICA 3 s.h.
Selected treatment of historical development of modern American movements in social and political thought, religion, philosophy, fine arts, and literature.

- HI 565 HISTORY OF BLACK AMERICA SINCE EMANCIPATION 3 s.h.
Description and analysis of role of Blacks in history of the United States since the Civil War; emphasis on key leaders, major organizations, leading movements and crucial ideologies of Blacks in modern America.
- HI 567 ECONOMIC HISTORY OF U.S. 3 s.h.
Historical development of economic institutions in American life since Independence; emphasis on farming, labor, transportation, banking and manufacturing.
- HI 568 U.S. URBAN HISTORY 3 s.h.
A survey of American cities from their beginnings to present emphasizing relationship of urban history of social science theory, and stages and process of city development.
- HI 569 WOMEN IN AMERICA 3 s.h.
Surveys of religious, legal, political, social and popular culture perspectives of womanhood in America from colonial times to the present.
- HI 572 HISTORY OF THE EARLY AMERICAN WORKING CLASS 3 s.h.
Description and analysis of nature and significance of the U.S. working class in the 18th and 19th centuries. Work settings and communities of workers will be examined as well as unions such as the National Labor Union and Knights of Labor.
- HI 573 HISTORY OF THE MODERN AMERICAN WORKING CLASS 3 s.h.
Description and analysis of nature and significance of the U.S. working class in the 20th century. Work settings and strikes will be examined and analyzed as well as unions such as the United Mine Workers and United Auto Workers, and leaders including Samuel Gompers, John L. Lewis, and George Meany.
- HI 581 SPECIAL TOPICS IN HISTORY 3 s.h.
Each semester courses are offered in interest areas which are not part of the regular course offerings.
- HI 591 FILM AS CULTURAL, INTELLECTUAL, AND SOCIAL HISTORY 3 s.h.
This course deals with the cinema as social, cultural and intellectual history from its origins to the present day.
- SS 599 CONTEMPORARY EUROPE 3 s.h.
A study/tour program in Europe, commonly of three weeks duration each summer. Itinerary differs, but normally includes London, Paris, Florence, Rome, Austria and Switzerland. Program atmosphere is informal and always fun and tiring (lots of walking). Informal lectures on site, guided tours. Academic work includes reading before departure and keeping a daily log.
- HI 600 READINGS IN HISTORY 3-6 s.h.
Direct readings of historical materials, focused on a general topic.
- HI 601 HISTORY SEMINAR 3-6 s.h.
Area research, culminating in a formal paper.
- HI 614 RESEARCH METHODS 3 s.h.
Investigation of library systems, reference works, bibliographies, how to compile a bibliography, organizing research, use of statistics, style systems in printing.

HI 692 HISTORY INTERNSHIP

1-6 s.h.

With departmental approval, students are attached to local or national government or private agencies doing directive, bibliographical, archival, or museum work. Advising professor meets with intern regularly and determines what papers or reports will be required.

HI 699 INDEPENDENT STUDY

3 s.h.

Student selects topic for individual study with an instructor.

HI 850 THESIS

3-6 s.h.

HOME ECONOMICS EDUCATION

The Graduate Program in Home Economics Education leads to a Master of Education Degree. The primary purpose of the program is to further develop professional competencies essential for more responsible leadership roles.

For admission, a student must have completed a baccalaureate degree in home economics with major in home economics education or with a minimum of 35 s.h. of home economics, 19 s.h. in education, including home economics education and student teaching, and a minimum of three s.h. in educational psychology. The degree must be from an approved institution.

Food and Nutrition majors who have a BS degree from an approved institution may be admitted to this program. Graduates with a Food Management and Nutrition background will not be qualified to teach in the public schools nor will this degree help them to meet state certification requirements for teaching Home Economics. However, students can become better qualified for leadership positions in their area of specialization.

Upon admission, students will be assigned an adviser. The student and adviser will outline a tentative program of studies. Any deviation from degree requirements shall have the written approval of the adviser and coordinator of the program.

Prior to the time the student is admitted to degree candidacy, he/she must, in consultation with his/her adviser and coordinator, select the thesis or no-thesis option.

Thesis Option: Candidates will complete 30 s.h. of approved course work plus a two to four s.h. thesis. The selection of and the proposal for research shall be approved by the adviser and other members of his/her Graduate Committee. The research shall be carried on by the candidate under the direction of the research adviser and/or committee members.

THE THESIS/NO THESIS OPTION, MASTER'S PROGRAM

Several IUP master's degree programs offer the graduate student a thesis/no-thesis option.

When the no-thesis option is chosen, additional approved course work—usually six or more credit hours—is required.

The typical committee thesis arrangement (3-6 s.h.) has the student working with a committee of four faculty members including the student's adviser and two faculty members, one of whom may or may not be a member of the program's department. The committee may include an off-campus

person with special expertise as part of the four if requested by the department and approved by the Graduate Dean.

<u>DEPARTMENT</u>	<u>DEGREE</u>	<u>THESIS</u>	<u>CREDITS</u>	<u>COMMENTS</u>
Home Economics	M.Ed.	Optional	30 ———	Thesis
			33 ———	No Thesis

Non-Thesis Option: In lieu of thesis, candidate must complete 33 s.h. of approved course work and two extensive research papers. One research paper will be required in HE 676 and the other research paper will be in another home economics course selected by the candidate and approved by the adviser and the coordinator.

MASTER OF EDUCATION IN HOME ECONOMICS

Students should complete 30 s.h. of work (thesis option) or 33 s.h. of work (no thesis option) from the following areas: Nine s.h. in Professional Development including one course in Humanistic studies selected from FE 514, 611, 612, or 613; one course in Behavioral studies selected from EP 604, 573, 576, 578, 580, or CE 629, 639, or EX 631; and GR 615 Elements of Research; six s.h. in a Specialization Core including HE 674 and 676; six to nine s.h. selected from courses HE 670, 671, 672 through 699; HE 672 is required of any student who has not completed a course in evaluation; and nine s.h. in a home economics subject matter concentration. Courses for the subject matter concentration may be selected from two or more subject areas of home economics or all courses may be selected from one subject area of home economics.

Courses HE 533, 677, or 697 may be counted for Home Economics Education or subject matter concentration depending on focus of course.

Dual-level courses taken at the undergraduate level cannot be repeated on the graduate level for graduate degree credit.

A maximum of six s.h. may apply toward degree requirements but only one to four s.h. may be applied in any one subject matter area. A maximum of four s.h. may be applied for any tour.

COURSE DESCRIPTIONS

General Courses

General courses may be used to meet the requirements for subject matter or home economics education depending upon the focus.

HE 533 TOUR IN HOME ECONOMICS 1-6 s.h.

Aspects of home economics are studied in relation to the culture of areas toured. Consult brochures, summer sessions catalogs, or chairperson for special offerings.

HE 652 INTERNSHIP 1-6 s.h.
Supervised work experience for majors.

HE 677 SEMINAR IN HOME ECONOMICS 1-3 s.h.
Seminars in selected topics.

HE 697 WORKSHOP IN HOME ECONOMICS 1-6 s.h.
Provides opportunities for experienced educational personnel to concentrate their study on common professional problems.

HE 699 INDEPENDENT STUDY IN HOME ECONOMICS 1-6 s.h.
Student will pursue an independent study in an area of home economics not previously studied and for which the student and adviser identify a need.

Human Development And The Family

HE 517 INFANT DEVELOPMENT 3 s.h.
Study of characteristic developmental changes of human infants from birth to approximately two and one-half years.

HE 526 TECHNIQUES OF PARENT EDUCATION 3 s.h.
Focuses on scope and aims of parent education movement. Methods of helping families become more effective in their parent-child relationships are examined.

HE 527 ADMINISTRATION OF CHILD DEVELOPMENT CENTERS 3 s.h.
Development of competencies needed to administer child care programs. Focuses on program philosophy, curriculum materials, parent and community involvement, staff selection and training, admissions and grouping, proposal writing, budgeting and finance, government regulations, reporting and record-keeping.

HE 620 PROBLEMS IN FAMILY LIVING 3 s.h.
Emphasis is placed on solving problems created by social change. New knowledge from science, medicine, sociology, economics, art and psychology is utilized to improve family living. Problems concerned with food, clothing, shelter, management, and family relationships are investigated.

HE 621 FIELD WORK IN FAMILY LIFE OR IN HUMAN DEVELOPMENT 3 s.h.
Designed to study individual and family interaction. Methods of working with various types of families through an analysis of research, scientific literature, and community programs are studied. Advanced graduate students plan and participate in laboratory-type work with individual families. (Permission of instructor for non-majors.)

Education

HE 555 HOME ECONOMICS PROGRAMS FOR INDIVIDUALS WITH SPECIAL NEEDS 3 s.h.
Application of vocational regulations and public laws in relation to individuals with special needs in home economics programs. Planning, methods, strategies, and resources for individuals with special needs in home economics programs in school and non-school settings. Three lecture hours. (Prerequisite EX 300/500.)

HE 556 INDEPENDENT LIVING FOR INDIVIDUALS WITH SPECIAL NEEDS 3 s.h.
Home management and work simplification techniques for individuals with special needs. Includes adaptations and modifications for housing, clothing, foods, child care, and consumer problems of handicapped individuals. Three lecture hours. (Prerequisite EX 300/500.)

HE 670 HOME ECONOMICS IN AMERICAN EDUCATION 3 s.h.
Present status of home economics is reviewed in terms of the profession's history and philosophy. Role and contribution of home economics at the elementary, secondary, post-secondary levels are reviewed and evaluated; trends and issues are investigated.

HE 671 HOME ECONOMICS IN HIGHER EDUCATION 3 s.h.

Contemporary programs at college level are evaluated in terms of major issues, trends, and problems in higher education. Emphasis is placed on problems of curriculum development, effective teaching, guidance and evaluation in professional home economics.

HE 672 EVALUATION IN HOME ECONOMICS 3 s.h.

Evaluative methods and techniques designed to measure a comprehensive range of home economics educational objectives are studied. Special attention to use and construction of teacher-made tests and evaluative devices.

HE 673 SUPERVISION AND ADMINISTRATION IN HOME ECONOMICS 3 s.h.

Deals with principles, methods, and techniques of supervision in home economics. Special attention is given to basic concepts in supervision such as human relations, communication process, decision-making and leadership strategies.

HE 674 ADVANCED METHODS OF TEACHING HOME ECONOMICS 3 s.h.

Various models of classroom teaching are studied with emphasis on procedure, equipment, and materials used in the improvement of instruction. Implications of current trends and issues relevant to classroom education are discussed.

HE 675 SPECIAL PROBLEMS IN HOME ECONOMICS 3 s.h.

Specific problems with curriculum, teaching, learning experiences and evaluation are stressed. Each student will research a special problem or area of interest.

HE 676 CURRICULUM DEVELOPMENT IN HOME ECONOMICS 3 s.h.

Special attention is focused on realistic curriculum decisions and using innovative procedures.

HE 690 RESEARCH IN HOME ECONOMICS 3 s.h.

Methodology is introduced and studied in terms of research problems. Reports by home economics, behavioral science, and education researchers are analyzed and evaluated. Designed to assist the student in defining a thesis. Student should complete HE 676 before scheduling this course.

INDUSTRIAL AND LABOR RELATIONS

The Master of Arts in Industrial and Labor Relations is a multi-disciplinary graduate degree program designed to prepare professional practitioners in the field of industrial and labor relations in public and private management, unions, government agencies, and neutral and service organizations. The 42 s.h. program consists of a required core of 27 s.h. and elective course offerings totaling 15 s.h.

In consultation with the adviser, each student will individually build the elective sequence of the program of study by choosing 15 elective s.h. from among Industrial and Labor Relations courses and courses approved by the adviser offered by other departments.

Students are strongly encouraged to elect an internship to integrate theory and practice in the field. Certain students with exceptional background in relevant work experience or previous course work may qualify for exemption from some courses. As part of their professional growth, students may also participate in the research and training activities of the Pennsylvania Center for the Study of Labor Relations.

COURSE REQUIREMENTS FOR THE M.A. DEGREE

- I. Required Core 27 s.h. in LR 610, LR 611, LR 612, LR 613, LR 615, LR 619, LR 625, LR 641, and EC 530.
- II. Elective Area: 15 s.h. chosen from other elective courses in Industrial and Labor Relations, or from related departments with the approval of student's adviser.

INDUSTRIAL AND LABOR RELATIONS

LR 526 CASE STUDIES IN LABOR-MANAGEMENT RELATIONS 3 s.h.
Study of labor management relationships in a variety of organizational setting through utilization of the case study technique.

LR 557 LABOR AND BUSINESS IN POLITICS 3 s.h.
Analysis of labor and business involvement in politics with special attention to the involvement of labor and business in Pennsylvania and national politics.

LR 581 SPECIAL TOPICS IN INDUSTRIAL AND LABOR RELATIONS 3 s.h.
According to student demand, special graduate courses on selected topics.

LR 610 EMPLOYEE RIGHTS UNDER LAW 3 s.h.
A review of the legislated rights and benefits of employees in terms of their impact on labor and management in the collective bargaining process.

LR 611 DEVELOPMENT AND THEORIES OF THE LABOR MOVEMENT 3 s.h.
Institutional and theoretical overview of the development of the American labor movement with special emphasis on major labor movement theorists. (Alternative: HI 566.)

LR 612 LABOR RELATIONS PRACTICE AND ADMINISTRATION 3 s.h.
Practice and administration of labor relations focusing on the operation and internal relationships of the individuals involved and upon the application of labor relations skills.

LR 613 FUNDAMENTALS OF AMERICAN INDUSTRIAL AND LABOR RELATIONS 3 s.h.
Introduction to the terms, theories, and practice of Industrial and Labor Relations in the United States.

LR 615 DISPUTE SETTLEMENT 3 s.h.
Review of the theories underlying and legislation supporting labor arbitration, emphasizing development of advocacy skills through simulations of actual disputes. Prerequisite: LR 613.

LR 618 SEMINAR: CURRENT ISSUES IN INDUSTRIAL AND LABOR RELATIONS 3 s.h.
Detailed examination of current professional issues in the field.

LR 619 RESEARCH METHODS IN INDUSTRIAL AND LABOR RELATIONS 3 s.h.
Nature of and major outlets for contemporary research in labor relations as well as the historical development of research in the field. Elements of statistics and quantitative interpretations are introduced.

- LR 620 INTERNSHIP 3 s.h.
Field experience in industrial and labor relations. An internship log and term paper are required.
- LR 621 LABOR RELATIONS IN THE PUBLIC SECTOR 3 s.h.
Developments in federal, state, and local labor relations including: presidential orders and federal agencies; survey of the states; Pennsylvania Acts 111 and 195; effects of public sector fact-finding and arbitration.
- LR 622 DISCRIMINATION IN EMPLOYMENT 3 s.h.
Investigation of employment discrimination in the United States with special attention to the roles of government, industry, and labor and the impact of federal intervention since 1960.
- LR 623 STRUCTURE AND GOVERNMENT OF UNIONS 3 s.h.
The union examined as an institution, with a focus on its organizational structure; administration; relationships with the employer, its members, and its state and national affiliates. Particular unions will be chosen for case study. Prerequisite: LR 613.
- LR 624 COMPARATIVE LABOR RELATIONS 3 s.h.
International dimensions of labor relations are explored by examining the labor-management relations in a foreign country or region. Prerequisite: LR 613.
- LR 625 PROCESSES OF COLLECTIVE BARGAINING 3 s.h.
Survey of current laws, principles and procedures in use in modern collective bargaining; and evolving trends.
- LR 631 HUMAN RESOURCE MANAGEMENT IN THE PUBLIC SECTOR 3 s.h.
Human resource management systems with a special examination of public sector organizations.
- LR 632 COMPENSATION AND BENEFIT ADMINISTRATION 3 s.h.
Study of the field of compensation management and benefits administration in the public and private sectors. Special emphasis on the input of collective bargaining in the development and administration of compensation and benefit systems and the necessary skills to function as a professional in the field.
- LR 640 NEGOTIATIONS 3 s.h.
A course on negotiations theory and practice which applies negotiations strategies from a variety of fields in hands-on simulations of collective bargaining in labor relations. Prerequisite: LR 613.
- LR 641 CONTRACT ADMINISTRATION 3 s.h.
Analysis of the practices and responsibilities of labor and management in the mutual performance of a collective bargaining agreement, with primary attention given to the process of grievance resolution. Prerequisite: LR 613.
- LR 650 ALTERNATIVE WORK STYLES 3 s.h.
Review of efforts to increase worker participation in certain levels of managerial decision making in private and public production or service enterprise, through shares in ownership, seats on boards, quality circles, and other participative structures. Results will be considered from the point of view of productivity, of worker satisfaction, of social utility. Prerequisite: LR 613.
- LR 681 SPECIAL TOPICS IN INDUSTRIAL AND LABOR RELATIONS 3 s.h.
According to student demand, special graduate courses on selected topics.

LR 699 INDEPENDENT STUDY

3 s.h.

Students will select one or more topics of critical importance in industrial and labor relations and will meet with faculty for independent reading, analysis, and evaluation. Prerequisites: Approval of department chairperson, dean, and provost.

LR 850 THESIS

3-6 s.h.

For students writing the thesis, LR 850 should be scheduled for the semester in which the student plans to complete his/her work. The thesis may be a non-committee thesis (1-3 s.h.), with one faculty member serving as the student's adviser; or a committee thesis (1-6 s.h.).

MATHEMATICS

The Mathematics Department offers the Master of Education degree with a major in mathematics and the Master of Science degree.

The Master of Education program is specifically designed for secondary mathematics teachers. Its purpose is to provide an opportunity for students to increase their knowledge of mathematics and to become aware of research and innovations in mathematics education.

The course requirements for the Master of Science program are quite flexible and include an option of six s.h. in an area related to mathematics. This flexibility allows the program to serve many purposes, including appropriate choices for secondary mathematics teachers, for persons preparing for employment in areas of applied mathematics, and for students who will pursue further graduate work in mathematics.

Each graduate student will be assigned an academic adviser to aid in selecting the most appropriate program. Approval of the adviser is required for all courses leading to the master's degree.

MASTER OF EDUCATION IN MATHEMATICS

A minimum of 30 s.h. is required for the Master of Education degree. Courses taken must satisfy the following requirements:

1. One course (three s.h.) from FE 514, 611, 612, 613.
2. One course (three s.h.) from EP 604, EP 573, EP 576, EP 578, EP 580, CE 629, CE 639, EX 631.
3. GR 615, Elements of Research (three s.h.).
4. Six s.h. from MA 651, MA 652, MA 650, MA 654. With special permission from the adviser, EM 651 and EM 652 are acceptable for the fulfillment of this requirement.
5. A minimum of 15 s.h. of mathematics content courses. All three s.h. graduate mathematics courses are considered content courses with the single exception of MA 600, MA 521 and MA 576 are required unless comparable courses have been completed at the undergraduate level.

For descriptions of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, see EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX courses, SPECIAL EDUCATION; for EM courses, MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS.

For description of GR courses, see entry under GENERAL SERVICE COURSES.

MASTER OF SCIENCE IN MATHEMATICS

Every candidate for the Master of Science degree in Mathematics must complete at least 30 s.h. of graduate work. These courses must satisfy the following criteria:

1. The course MA 600, Methods of Research in Mathematics is required of all students.
2. The two courses MA 576, Abstract Algebra I and MA 521, Advanced Calculus I, are required unless comparable courses have been completed at the undergraduate level.
3. The student may select 27 s.h. of content courses in mathematics or 21 s.h. of content courses and six s.h. in a related area. The department accepts the optional thesis as a content course. The student must have the adviser's approval of the courses elected in a related area.

COURSE DESCRIPTIONS

MA 521-522 ADVANCED CALCULUS I, II 3, 3 s.h.

A rigorous investigation of continuity; differentiation, and integration on real p -dimensional space. The Riemann-Stieltjes integral, infinite series, and infinite series of functions are also studied. Prerequisite: Permission of the adviser.

MA 523-524 COMPLEX VARIABLES I, II 3, 3 s.h.

Introduces fundamental concepts of complex analysis and includes the following topics: complex numbers, functions, sequences, analytic functions, elementary functions, complex integration, power series, Laurent series, singular points, calculus of residues, infinite product and partial fraction expansion, conformal mapping, and analytic continuation. Prerequisite: Permission of the adviser.

MA 527 TOPOLOGY 3 s.h.

Basic topological concepts, including some topological invariants. Relationships between topology and other disciplines of mathematics are discussed. Prerequisites: Differential & Integral Calculus.

MA 545 PROGRAMMING MODELS IN OPERATIONS RESEARCH 3 s.h.

Prerequisites: two semesters of calculus. Development of deterministic mathematical models for managerial and social sciences with relevant computational techniques. Three hours lecture per week.

MA 546 PROBABILISTIC MODELS IN OPERATIONS RESEARCH 3 s.h.

Prerequisites: two semesters of calculus, MA 563 or equivalent. Development of probabilistic mathematical models for managerial and social sciences with relevant computational techniques. Three hours lecture per week.

MA 553 THEORY OF NUMBERS 3 s.h.

Elementary properties of divisibility, congruences, Chinese remainder theories, primitive roots and indices, quadratic reciprocity, Diophantine equations, and number theoretic functions. Prerequisites: Differential and Integral Calculus.

MA 563 MATHEMATICAL STATISTICS I 3 s.h.

Probability theory necessary for an understanding of mathematical statistics is developed; applications of the theory are given, with emphasis on binomial, Poisson, and normal distributions. Distributions of sums and a central limit theorem are developed. Three hours lecture per week. Prerequisite: Differential & Integral Calculus.

MA 564 MATHEMATICAL STATISTICS II 3 s.h.

Multivariate distributions, properties of the moment generating function, change of variable technique. Chi-square distribution, estimation, confidence intervals, testing hypotheses, contingency tables, goodness of fit. Many practical applications. Use of calculating machines where appropriate. Three hours lecture per week. Prerequisite: MA 563.

MA 565 TOPICS IN STATISTICS 3 s.h.

Correlation and regression from applied and theoretical points of view, bivariate normal distribution, small sample theory. Student's *t* and *F* distributions, analysis of variance, nonparametric methods. Many practical applications. Calculating machines or computers used as appropriate. Three hours lecture per week. Prerequisite: MA 564.

MA 571 LINEAR ALGEBRA 3 s.h.

Theory of vector spaces and linear transformations, applications to linear equations, determinants, and characteristic roots are studied.

MA 576-577 ABSTRACT ALGEBRA I, II 3, 3 s.h.

Basic algebraic structures such as groups, rings, integral domains, and fields. Designed to develop ability to construct formal proofs and work within an abstract axiomatic system. Polynomial rings, factorization and field extension leading up to Galois Theory.

MA 581-583 TOPIC SEMINARS IN MATHEMATICS 3 s.h.

Special topics going beyond the scope of regularly offered courses. Offered per student interest/available staff. Students may take more than one Topic Seminar with written approval of adviser. Prerequisite: Consent of instructor.

MA 600 METHODS OF RESEARCH IN MATHEMATICS 3 s.h.

Review of literature and recent research in mathematics. Emphasis on use of periodicals, other library resources. Each student completes an independent study of an approved topic, including a written report.

MA 625-626 REAL VARIABLES I, II 3, 3 s.h.

Classical theory of functions of a real variable and of measure and integration theory. Prerequisite: MA 522 or equivalent.

MA 631 FOUNDATIONS OF MATHEMATICS I 3 s.h.

Designed to acquaint students with logical techniques used in proof and set theory. Topics include symbolic logic, rules and inference, validity of arguments, algebra of sets, cardinal numbers, the well-ordering property, and the Axiom of Choice.

MA 632 FOUNDATIONS OF MATHEMATICS II 3 s.h.

Properties of axiom systems including consistency, independence, and completeness for propositional calculus and first-order predicate calculus. Prerequisites: MA 631 and at least six s.h. of graduate level mathematics.

MA 641 DIFFERENTIAL EQUATIONS 3 s.h.

Special solvable nonlinear equations with solutions based on operator techniques, Laplace transform or infinite series. Applications to physical problems. Three hours lecture per week. Prerequisite: Differential & Integral Calculus.

MA 650 HISTORY OF MATHEMATICS 3 s.h.

Men and ideas that have shaped the course of events in mathematics. Major attention given to developing activities for secondary school mathematics classroom which incorporate the historical viewpoint.

MA 651 SEMINAR IN TEACHING JUNIOR HIGH SCHOOL MATHEMATICS 3 s.h.

Explores problems of teaching mathematics at junior high level. Emphasis on a discovery, lab-oriented approach to teaching. Prerequisite: Permission of instructor.

MA 652 SEMINAR IN TEACHING SENIOR HIGH SCHOOL MATHEMATICS 3 s.h.

National and international forces shaping today's mathematics programs, curriculum development and research, art of generating interest, formation of concepts, proof, problem solving, generalization, and evaluation. Special attention to teaching topics from algebra and calculus and modern approaches to teaching geometry and trigonometry. Prerequisite: Permission of instructor.

MA 654 CURRICULUM & SUPERVISION IN MATHEMATICS 3 s.h.

Basic principles underlying an effective mathematics curriculum from both a theoretical and experimental viewpoint. Investigates supervisor's role as source of stimulation, leadership, and expertise in teaching mathematics.

MA 655 PROJECTIVE GEOMETRY 3 s.h.

An introduction to Klein's formulation of geometry of the invariant theory of a given set under a given group of transformations and develops projective spaces of 1 and 2 dimensions and conics and quadratic forms. Prerequisites: Undergraduate courses in linear algebra and geometry.

MA 656 AFFINE GEOMETRY 3 s.h.

Examines affine and metric geometries based on an axiom system stated in terms of linear algebra, which leads to important theorems of classical geometry. Prerequisites: Undergraduate courses in linear and abstract algebra.

MA 677 TOPICS IN ABSTRACT ALGEBRA 3 s.h.

Topics in group theory, ring theory, and study of modules. Prerequisite: MA 577.

MA 690 INDEPENDENT STUDY IN MATHEMATICS 3 s.h.

Under the guidance of faculty member, a student may study some area of mathematics not in the regular courses.

MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS

The program leading to a Master of Education degree in Mathematics for Elementary School Teachers is designed to give the elementary and middle school teacher both depth and breadth in the mathematical concepts essential to a contemporary school mathematics program. An integral part of the program will be to familiarize the students with recent developments in curriculum, instruction, and implementation of contemporary mathematics programs in the elementary schools. Upon completion of the program the student will be prepared to serve as a coordinator, resource person or in other leadership roles in an elementary or middle school mathematics program. For teachers in the public schools, the program meets the credit requirements for instructional Level II certification.

Each person admitted to the program will be assigned an advisor who will assist the student in selecting the course work best suited to the student's background and professional aspirations.

A minimum of 30 s.h. is required for the Master of Education in Mathematics for Elementary School Teachers Degree. Courses taken must satisfy the following requirements:

- I. Professional Development Area — nine s.h. as listed below:
 - A. Humanistic Studies — three s.h. should be selected from the course listings for the Foundations of Education department.
 - B. Behavioral Studies — three s.h. should be selected from a list of approved courses (consult advisor). Course descriptions are under the appropriate departmental listings for the Educational Psychology, Counselor Education, Special Education, and Elementary Education departments.
 - C. Educational Research — three s.h.
GR 615 Elements of Research.
- II. Specialization Core — six s.h. required from EM 650, 651, 652.
- III. Subject Matter Concentration Area — 11-15 s.h.
A minimum of 15 s.h. will usually be selected from the courses listed if the student elects not to write a thesis. If the student elects to write a thesis, 11 semester hours will be taken in the Subject Matter Concentration Area. Courses other than those with "EM" department labels (such as MA 654) may be taken to meet the Subject Matter Concentration Area requirements with the advisor's consent. MA courses are listed in the MATHEMATICS section.
- IV. Thesis (optional) — two to four s.h.

A student may elect to write a thesis for two to four s.h. after consultation with his/her advisor. This decision should be made at the time the student is admitted to candidacy for the degree.

Thesis credits will be determined by the advisor in consultation with the student.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

INTERNSHIP PROGRAM AS PART OF THE MASTER OF EDUCATION IN MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS DEGREE PROGRAM

IUP in cooperation with selected school systems offers a graduate level Internship Program as part of the Master of Education in Mathematics for Elementary School Teachers degree. This program is intended to provide a limited number of well qualified graduate students with teaching experiences in a K-8 mathematics program while completing the requirements for the Master of Education in Mathematics for Elementary School Teachers degree.

The professional work experiences of the interns will earn graduate credit and therefore will be subject to review and evaluation by a faculty member from the University, as well as being under the supervision of designated public school personnel.

Information regarding the Internship Program may be obtained from: Director of Graduate Studies in Mathematics for Elementary School Teachers, Mathematics Department, IUP, Indiana, PA 15705.

COURSE DESCRIPTIONS

EM 517 INTRODUCTION TO PROBABILITY AND STATISTICS

3 s.h.

Introduces students to elementary concepts of probability which will enable them to analyze data, make predictions and determine what concepts may be used with children. Prerequisite: MA 152 or equivalent.

EM 520 PRE-CALCULUS MATHEMATICS I

3 s.h.

Examines the function concept as applied to elementary real number functions and graphing techniques for these functions. Topics include real number functions such as absolute value, step, linear quadratic and other polynomial functions, trigonometric and other periodic functions, exponential logarithmic functions and all other inverse functions. Students will examine curricular materials that develop function concepts in grades K-8. Prerequisite: MA 152 or equivalent.

EM 550 MATHEMATICS FOR EARLY CHILDHOOD

3 s.h.

Study of child-centered, activity-oriented, mathematics program for early childhood education. Students gather and construct manipulative materials and become familiar with commercially produced materials. Pre-numbered activities, number activities, numeration, operations on whole numbers, fractional numbers, geometry, measurement, problem solving, study of related research. Prerequisite: MA 152 or equivalent.

EM 556 PRINCIPLES OF GEOMETRY I

3 s.h.

Students become acquainted with an informal, intuitive approach to geometry. Activities and materials for teaching geometrical concepts to children are an integral part of the course. Prerequisite: MA 152 or equivalent.

EM 557 INTRODUCTION TO NUMBER THEORY

3 s.h.

Introduction to topics in elementary number theory including: basic operations and properties of integers; divisibility properties of integers; modular arithmetic and congruences; diophantine equations; interesting relationships among numbers; applications of number theory in elementary school mathematics. Prerequisite: MA 152 or equivalent.

EM 558 INTRODUCTION TO LOGIC AND LOGICAL GAMES

3 s.h.

Introduction to some basic ideas, terminology and notation of logic. Topics considered: symbolic logic, with special emphasis on algebra of propositions; applications of Boolean Algebra such as algebra of sets and switching circuits; and introduction to quantification theory and its value in determining validity of mathematical arguments, inference schemes and logical puzzles and a consideration of other topics in logic suitable for a K-8 mathematics curriculum. Prerequisite: MA 152 or equivalent.

EM 559 COMPUTER RELATED TOPICS IN THE ELEMENTARY AND MIDDLE SCHOOL

3 s.h.

This course is intended to provide teachers with the concepts and techniques necessary to teach computer related topics to children in the elementary and middle schools. Participants will work with elementary school children throughout the semester. Prerequisite: MA 152 or equivalent (or consent of instructor).

EM 571 BASIC CONCEPTS OF ALGEBRA 3 s.h.

Concepts of basic algebraic structures such as group, ring integral domain, field and vector space are studied within the context of the mathematical maturity of the student. Other topics include relations and functions, polynomials and polynomial equations, systems of equations and inequalities. Consideration given to development of these concepts in the mathematics curriculum. Prerequisite: MA 152 or equivalent.

EM 601 BASIC CONCEPTS IN MATHEMATICS I 3 s.h.

For students who have not taken MA 151 or an equivalent course as undergraduates. Will give a good understanding of development and structure of systems of numeration up to and including the set of real numbers.

EM 602 BASIC CONCEPTS IN MATHEMATICS II 3 s.h.

For students who as undergraduates have not taken MA 152 or an equivalent course. Will give a basic understanding of algebraic properties of different mathematical systems and help the student to understand how properties of systems are interrelated. Prerequisite: EM 601 or equivalent.

EM 603 TEACHING THE METRIC SYSTEM 3 s.h.

A course designed for elementary and/or middle school teachers that will thoroughly acquaint them with the SI Metric System as the general public will use it and provide an opportunity to investigate and create activities suitable for their students. Secondary teachers unfamiliar with the SI System or with methods of teaching the system will find this course very beneficial also. Prerequisite: Methods course in teaching mathematics or consent of instructor.

**EM 650 CURRICULUM AND INSTRUCTION IN
ELEMENTARY SCHOOL MATHEMATICS 3 s.h.**

The design of this course is to familiarize the elementary/middle school teacher with the philosophical and psychological issues that guide the development of mathematics curricula. Topics include: a history of the development of mathematics curriculum; innovative curricula that have impacted on teaching and learning; ways of implementing a contemporary program and criteria for the textbook selection. Prerequisite: Methods course in teaching mathematics or consent of instructor.

**EM 651 THE LABORATORY APPROACH TO
TEACHING MATHEMATICS 3 s.h.**

Development of the lab approach to the teaching of mathematics. Includes both an intensive study of techniques, organization, and supervision of laboratory activities and the practical design construction and implementation of materials. Prerequisite: Methods course in teaching mathematics or consent of instructor.

**EM 652 DIAGNOSIS AND REMEDIAL TEACHING
OF MATHEMATICS 3 s.h.**

Examines why some children have difficulty in learning mathematical concepts and presents tools and techniques for diagnosing and remediating common difficulties in elementary and middle school mathematics. Course valuable for those teaching in elementary, middle school, or remedial programs. Prerequisite: Methods course in teaching mathematics or consent of instructor.

EM 681 SPECIAL TOPICS 3 s.h.

Special topics which go beyond the scope of regular offered courses. Offered on basis of student interest and available staff. The student may take more than one Special Topics offering with the written approval of the advisor. Prerequisite: Consent of the instructor.

EM 699 ELEMENTARY MATH — INDEPENDENT STUDY

1-6 s.h.

Under the guidance of a faculty member, a student may study some area of mathematics or mathematics education not covered in the regular courses.

MUSIC AND MUSIC EDUCATION

The graduate program in music provides the student with opportunities to improve his/her skills as teacher, performer or scholar beyond the bachelor's degree. Upon acceptance by The Graduate School, each student consults the Director of Graduate Studies in Music who will help to plan the sequence of courses, and who will be responsible for the formation of the thesis or recital committee.

ADMISSION: Undergraduate degree with major in music or its demonstrated equivalent is required. Placement examinations will be required in theory, music history, piano proficiency and principal performing medium. The adviser will use the results of these examinations to determine areas of deficiency and to prescribe specific electives. Upon completion of course work, each student will schedule a comprehensive oral examination with a faculty committee.

MASTER OF ARTS IN MUSIC

Core Courses: MU 600, MU 516 (MU 618 for Music Education)
and MU 632

nine s.h.

Major Concentration:

- I. Music History and Literature — Courses (four) are selected from the following:
MU 503, MU 504, MU 505, MU 507, MU 508,
MU 510, MU 618 12 s.h.
- II. Music Theory and Composition — Courses (four) are selected from the following:
MU 511, MU 512, MU 513, MU 514, MU 515, MU 618 11-12 s.h.
- III. Music Performance — Applied music courses in the major performance area
AM 610-771 12 s.h.
- IV. Music Education — MU 619 and MU 620 are required; with recital or thesis, two or three additional courses are selected; without recital or thesis, up to four additional courses are selected from the following:
MU 501, MU 502, MU 628, MU 629, MU 631, MU 633,
MU 634, MU 635, MU 636, MU 537, MU 540-550 10-14 s.h.

Elective Courses:

If major concentration is I, II, III, courses totaling six s.h. are selected according to students' needs and interests.

If major concentration is IV, select a music theory or history course (3 s.h.) and applied music study in students' major or minor performance area (4 s.h.)

Thesis or Recital:

GR 850	Thesis — If major concentration is I or II (Optional if major concentration is IV)	3-4 s.h. 2-4 s.h.
GR 851	Recital — If major concentration is III (Optional if major concentration is IV)	4 s.h. 2-4 s.h.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

MASTER OF EDUCATION IN MUSIC EDUCATION

- I. Professional Development Area (nine s.h.)
 - A. Humanistic Studies (3 s.h.) — One of the following: FE 611, FE 612, FE 613, FE 514
 - B. Behavioral Studies (3 s.h.) — One of the following: EP 604, EP 573, EP 576, EP 578, EP 580, CE 629, CE 639, or EX 631.
 - C. Research (3 s.h.)
 - GR 615 Elements of Research
- II. Specialization Core (six s.h.) — Two of the following:

FE 515 Decision Making Curriculum Development	3 s.h.
CM 600 Seminar in Learning Resources	3 s.h.
Departmental Methods Course(s)	3-6 s.h.
Departmental Curriculum Course(s)	3-6 s.h.
- III. Subject Area and/or Electives and/or Thesis (15 s.h.)
 - A. Required Courses — Music Education Core (nine s.h.)

MU 618 Comprehensive Musicianship	3 s.h.
MU 619 Methods of Comprehensive Musicianship	3 s.h.
MU 620 Foundations of Music Education	3 s.h.
 - B. Elective Courses (six s.h. selected from the following list)

MU 501 Advanced Choral Conducting	2 s.h.
MU 502 Advanced Instrumental Conducting	2 s.h.
MU 628 Contemporary International Approaches to Elementary Music Education	2 s.h.
MU 629 Advanced String Pedagogy	2 s.h.
MU 631 Administrative Problems in Music Education	2 s.h.
MU 633 Comparative Choral Methods	2 s.h.
MU 634 Practicum in Instrumental Music	2 s.h.
MU 635 Psychology of Music Education	2 s.h.
MU 636 Advanced Technology of Music Teaching	2 s.h.
MU 537 Techniques of the Marching Band	2 s.h.
MU 540-550 Summer Workshop (content varies)	1-3 s.h.
AM 601-771 Applied Music	1-4 s.h.
Other approved elective	
 - C. Thesis or Recital (optional)

For description of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX courses, SPECIAL EDUCATION; for CM course, COMMUNICATIONS MEDIA.

COURSE DESCRIPTIONS

- MU 501 ADVANCED CHORAL CONDUCTING 2 s.h.
Material will include large choral works with and without accompaniment. Student will be expected to develop skills in reading score.
- MU 502 ADVANCED INSTRUMENTAL CONDUCTING 2 s.h.
An intensive study of large instrumental works. Skill development of each individual will be stressed.
- MU 503 MUSIC OF THE BAROQUE ERA 3 s.h.
A survey of music from about 1600 to 1750.
- MU 504 MUSIC OF THE CLASSICAL ERA 3 s.h.
A survey of music from about 1725 to about 1827.
- MU 505 MUSIC OF THE ROMANTIC ERA 3 s.h.
A survey of music from about 1800 to 1910.
- MU 506 VOICE PEDAGOGY 3 s.h.
Techniques in teaching voice.
- MU 507 MUSIC OF THE 20TH CENTURY 3 s.h.
A survey of the principal stylistic trends in music from 1900 to the present.
- MU 508 MUSIC OF THE 16TH CENTURY 3 s.h.
A survey of music from about 1500 to about 1600.
- MU 509 PIANO PEDAGOGY 3 s.h.
Survey of current and significant past developments in teaching of piano, both privately and in small and large classes. The various piano methods are analyzed, compared, criticized, and adapted to each individual's use.
- MU 510 SEMINAR IN MUSIC
Subject matter will change each semester. Students will make presentations and write an extensive research paper. Seminar may be repeated provided subject matter is not (with departmental approval). An in-depth study can be made of narrowly defined areas, such as life and/or works of a specific composer or group of composers.
- MU 511 COMPOSITION 3 s.h.
Composition of Music in various song forms through the rondos and the larger sonata allegro form. Careful analysis of similar forms of major composers. Instruction will be highly individualized and will depend considerably on personal interest of the student.
- MU 512 ADVANCED ORCHESTRATION 3 s.h.
Consideration to problems of scoring for full symphony orchestra, string orchestra and chamber orchestra. Students will produce a full score and orchestra parts so that orchestration may be tested by actual playing by the University Symphony.
- MU 513 ADVANCED BAND SCORING 3 s.h.
Problems of scoring for modern concert band. In addition, problems of scoring for brass band, woodwind choir, and percussion ensemble will be considered.
- MU 514 ADVANCED CHORAL ARRANGING 2 s.h.
Four-part writing for chorus. Five, six, seven and eight-part writing will comprise large part of the course. Special consideration will be given to problem of writing for men's and women's voices.

- MU 515 CANON, DOUBLE COUNTERPOINT, AND FUGUE** 3 s.h.
Application of contrapuntal techniques, through analysis and creative writing. Included will be study and writing of two- and three-voice canons; two- and three-part inventions; and two-, three-, and four-voice fugues.
- MU 516 ANALYTICAL TECHNIQUES** 3 s.h.
Study of representative compositions of various periods, with emphasis on formal harmonic and stylistic analysis. Student will develop basic analytical techniques necessary for analysis of music of any period.
- MU 535 MUSIC FOR THE EXCEPTIONAL STUDENT** 3 s.h.
Develops music education skills, techniques and materials for the mentally, physically or neurologically handicapped student, and the gifted student. Designed for majors in music education, special education, or elementary education.
- MU 537 TECHNIQUES OF THE MARCHING BAND** 2 s.h.
Theory and practical application of fundamentals of precision drill. Also this course deals with building "half-time shows," materials and instrumentation of the marching band.
- MU 540-550 SUMMER MUSIC WORKSHOP** 1-3 s.h.
Concentration in special interest areas. Content varies.
- MU 551 ITALIAN/ENGLISH DICTION** 2 s.h.
- MU 553 FRENCH DICTION** 2 s.h.
- MU 554 GERMAN DICTION** 2 s.h.
- MU 575 MUSIC ENSEMBLES** 1 s.h.
Various music department ensembles are open to qualified graduate students.
- MU 600 BIBLIOGRAPHY OF MUSIC** 3 s.h.
Introduces graduate students to various types of music, music literature and bibliographical tools which exist and which may be used in research in music. As a project, each student will prepare an extensive annotated bibliography of a music subject within his special interest.
- MU 618 COMPREHENSIVE MUSICIANSHIP** 3 s.h.
Combines undergraduate concepts and skills in music theory, literature, and performance at an advanced level using an integrated approach. Prepares student to function in a variety of musical roles.
- MU 619 METHODS FOR COMPREHENSIVE MUSICIANSHIP** 3 s.h.
Includes learning strategies, experiences, and activities appropriate for introducing Comprehensive Musicianship at elementary and secondary school levels.
- MU 620 FOUNDATIONS OF MUSIC EDUCATION** 3 s.h.
Study of historical, philosophical and social foundation of music education including current trends in educational thought and their implications for school music program.
- MU 622 COMPOSITION II** 3 s.h.
- MU 623 COMPOSITION III** 3 s.h.

**MU 628 CONTEMPORARY INTERNATIONAL APPROACHES
TO ELEMENTARY EDUCATION**

2 s.h.

An introduction to new developments in elementary, music education practices based on techniques originated by Carl Orff in Germany, Zoltan Kodaly in Hungary and Shinichi Suzuki in Japan. Authentic adaptations of music and materials in lecture, demonstration and workshop situations.

MU 629 ADVANCED STRING PEDAGOGY

2 s.h.

Study of specific techniques and problems of teaching violin, viola, cello and double bass in both individual and class situations.

MU 631 ADMINISTRATIVE PROBLEMS IN MUSIC EDUCATION

2 s.h.

Review of conventional administrative organization of music education in public schools. Role of music director, music specialist, consultant, and music resource teacher will be carefully defined. Consideration of problems of scheduling in public school. Current issues concerned with music education and public education in general will be considered including curriculum development.

MU 632 RESEARCH TECHNIQUES IN MUSIC

3 s.h.

Study of research techniques appropriate for music and music education including selection of research problem, collection of data, types of research, survey of current research studies in music education and use of library in connection with research problems. Elements of statistics are introduced as needed to interpret research reports. As part of requirements, student will prepare a written plan for research project or thesis.

MU 633 COMPARATIVE CHORAL METHODS

2 s.h.

Materials and procedures of preparation of vocal groups for public performance. Several accepted, yet contrasting, approaches will be considered, ranging from the Christiansen technique to that of John Finley Williamson. Special attention to program building.

MU 634 PRACTICUM IN INSTRUMENTAL MUSIC

2 s.h.

Consideration of those materials and procedures which have been proven by actual use in the United States. These various approaches will be compared and critically analyzed by the class. Rehearsal techniques, efficient use of time and basic motivation will be stressed.

MU 635 PSYCHOLOGY OF MUSIC EDUCATION

2 s.h.

An analysis of latest evidence produced by field of psychology in music education as applied in actual classroom situations.

MU 636 ADVANCED TECHNOLOGY OF MUSIC EDUCATION

2 s.h.

Examination and application of modern communications media and their role in music education. Development of an experimental sound lab, use of electronic devices, synthesizers and computers. Application of systems approach and programmed learning to music education.

MU 699 INDEPENDENT STUDY IN MUSIC

1-6 s.h.

APPLIED MUSIC (AM 601-771)

1-4 s.h.

The following courses will be taught in form of private lessons geared to individual student and aiming at maximum progress of each student, depending on background of the student and time available. The student should for any series of lessons use the first number in programming for the first time, the second number for the second time, etc.

AM 601, 651, 701, 751	Private Piano
AM 602, 652, 702, 752	Private Organ
AM 603, 653, 703, 753	Private Harpsicord
AM 605, 655, 705, 755	Private Voice
AM 606, 656, 705, 756	Private Violin
AM 607, 657, 707, 757	Private Viola
AM 608, 658, 708, 758	Private Cello
AM 609, 659, 709, 759	Private Bass Viol
AM 610, 660, 710, 760	Private Flute
AM 611, 661, 711, 761	Private Clarinet
AM 612, 662, 712, 762	Private Oboe
AM 613, 663, 713, 763	Private Bassoon
AM 614, 664, 714, 764	Private Saxophone
AM 615, 665, 715, 765	Private Trumpet
AM 616, 666, 716, 766	Private French Horn
AM 617, 667, 717, 767	Private Trombone
AM 618, 668, 718, 768	Private Baritone Horn
AM 619, 669, 719, 769	Private Tuba
AM 620, 670, 720, 770	Private Percussion
AM 621, 671, 721, 771	Private Guitar

NURSING

The Nursing Department offers a Master of Science degree with a concentration on Family Nursing. The program of study includes three areas of focus: the clinical focus on Family Nursing, a focus on nursing theory and research, and a functional focus on either the teaching of nursing or the administration of nursing services. The program is designed to prepare graduates to function as teachers, administrators, or practitioners of family nursing.

In addition to meeting the requirements for admission to the Graduate School, the student must have graduated from an NLN accredited baccalaureate nursing program, be licensed to practice nursing in Pennsylvania, have completed an undergraduate statistics course, have had two years of nursing work experience, and have submitted letters of recommendation from three individuals attesting to the student's nursing competency and potential for graduate study. For admission to degree candidacy, the student must have completed at least six hours of graduate Nursing courses, have achieved satisfactory scores on the Graduate Record Examination, and show a 3.0 grade average in graduate courses.

The Master of Science in Nursing curriculum requires completion of 38 hours of prescribed coursework plus a thesis, or 38 hours of prescribed coursework plus an additional 6 hours of approved elective courses. Research is an essential component of the program, whether or not the student elects to complete a thesis. The functional component of teaching or administration requires a practicum; practicum sites are secured by graduate faculty and practice is supervised by graduate faculty. As a terminating ac-

tivity, the student is required to write a comprehensive examination, the content and procedure determined by the graduate faculty. The purpose of the comprehensive examination is to test the student's ability to analyze and synthesize theory, concepts and methodologies learned over the period of study for the Master's degree. Further information on course requirements, academic policies and program requirements is included in the MSN Handbook which is distributed to all graduate students and is available at the program office.

COURSE DESCRIPTIONS

NU 610 NURSING ADMINISTRATION PRACTICUM 5 s.h.
Development of the functional role of nurse administrator; practice in a health care agency under the supervision of a practicing nurse administrator; application of administrative theory to nursing.

NU 611 TEACHING PRACTICUM 5 s.h.
Development of functional role as nurse educator; practice under the guidance of a master teacher of Nursing.

NU 615 ADVANCED NURSING RESEARCH 3 s.h.
Selection of a research problem, the literature search, data collection, elements of statistical analysis, and writing research reports are studied. Thesis proposal will be developed during this course.

NU 620 THEORETICAL FOUNDATION FOR NURSING 3 s.h.
Contemporary theories of nursing; concept formulation, fundamental theory development and application to nursing practice; social and political issues.

NU 624 CURRICULUM DEVELOPMENT FOR NURSING PROGRAMS 3 s.h.
Development of curriculum philosophy, conceptual framework, objectives, and course content essential to undergraduate education in nursing; overview of curriculum philosophies.

NU 625 TEACHING STRATEGIES FOR NURSING CURRICULUM 3 s.h.
Theories of learning, instructional modalities, teaching strategies and methods, methods of evaluation of learning; emphasis on theoretical and clinical requirements for professional nursing.

NU 627 ADMINISTRATION OF NURSING SERVICES 3 s.h.
Conceptual framework of nursing administration; goals and structure for nursing management, processes, resources, controls; administrative and organizational theory.

NU 630 FAMILY NURSING I 3 s.h.
The study of family theory and the family process, with emphasis on the nuclear and extended family; assessment techniques, family analysis.

NU 631 FAMILY NURSING II 3 s.h.
Focus is on Family health problems in the non-urban community setting, promotion of health, maintenance of health, and health education; development of knowledge of the process of diagnosis of deviations from health, application of that knowledge in family nursing practice; fundamental disease processes and the study of the sick or disordered human system.

NU 632 FAMILY ASSESSMENT & ANALYSIS 3 s.h.
Practicum, with concentrated study of either a nuclear family or an extended family.

NU 633 FAMILY NURSING III**3 s.h.**

Study of health care systems and the role of the professional nurse in the community; health planning, health policy development, and health care program evaluation; emphasis on the family and referral systems, development of a clinical nursing role in non-urban health care; nursing in health care agencies, client homes, clinics.

NU 850 THESIS**3-6 s.h.**

Thesis should be scheduled for the semester in which student plans to complete degree requirements. A committee of faculty members will provide thesis supervision.

PHILOSOPHY AND RELIGIOUS STUDIES

The Philosophy & Religious Studies Department does not presently offer a graduate degree in either area. However, graduate students in other disciplines and public school teachers will find courses which relate directly to their fields on a theoretical level. And, in some cases, philosophy courses are accepted as electives in graduate programs in other disciplines (see your department advisor for further information). Research or thesis work may be done in Philosophy or Religious Studies with approval of the student's major program advisor.

COURSE DESCRIPTIONS

PH 505 HUMAN RIGHTS: THEIR BASIS AND BOUNDARIES**3 s.h.**

An analysis of a concept which is the focus of much moral, political and legal dispute. Philosophical sources are supplemented by recent social science research concerning the comparative abilities of human and nonhuman animals and by environmental studies which prompt consideration of the possible rights of future generations.

PH 560 PHILOSOPHY OF LANGUAGE**3 s.h.**

An investigation of issues in the philosophy of language and related issues in linguistics (including anthropological linguistics, sociolinguistics and psycholinguistics). Topics include, e.g., the influence of language on perception, rationalist/empiricist perspectives on language acquisition, language and political control, reference, meaning and truth.

RS 580 READINGS IN RELIGIOUS THOUGHT**3 s.h.**

An examination of religion as a vital human phenomenon. Treating both classical and contemporary themes; origin of western theological thinking; alienation; contemporary atheism; definitions of deity in western and eastern religions; the sacred; origins of religion.

PH/RS 581 SPECIAL TOPICS**1-3 s.h.****PH 582 PROBLEMS OF ETHICS****3 s.h.**

An investigation into the nature of morality by focusing on influential historical and contemporary ethical theories and issues.

PH 583 AMERICAN PHILOSOPHIC THOUGHT**3 s.h.**

Study of influential and original philosophies developed in America from colonial period to present. Topics include the American Enlightenment, Transcendentalism, Evolution, Idealism, Pragmatism and Naturalism.

PH/RS 584 PHILOSOPHY/RELIGIOUS STUDIES SEMINAR 3 s.h.
Area research in the discipline, considering various facets of a central problem. Students doing a thesis or research project in Philosophy or Religious Studies will register for this course.

PH 585 PROBLEMS IN LOGIC 3 s.h.
An investigation into issues in deductive and/or inductive logic, fallacy analysis and the nature of critical thinking.

PH/RS 599 INDEPENDENT STUDY 1-6 s.h.

PHYSICS

The graduate program in physics offers a choice of three degrees: a Master of Education, a Master of Arts, and a Master of Science. The student obtaining a master's degree for fulfillment of certification requirements usually selects either the Master of Education Degree or the Master of Arts Degree. The student obtaining a master's degree for additional preparation for research, an industrial position, or further graduate work will usually select the Master of Science Degree.

Because of a wide range of possible courses and research areas available, the student is required to have the consent of his/her department adviser before selecting a course or initiating a research project. Adviser assignments are made as soon as the acceptance of a graduate student reaches the physics department. The graduate student should arrange appointments with his/her adviser. The flexibility of the program allows the student to satisfy almost any combination of educational goals.

MASTER OF EDUCATION IN PHYSICS

- I. Professional Development Area — nine s.h.
 - A. Humanistic Studies (three s.h.) — One course must be selected from FE 514, 611, 612, 613.
 - B. Behavioral Studies (three s.h.) — One course must be selected from the following: EP 604, EP 573, EP 576, EP 578, EP 580, CE 629, CE 639, EX 631.
 - C. Research Coursework (three s.h.) — Students in this program must enroll in GR 615.
- II. Specialization core — nine s.h.

Students in this program must enroll in the following three courses for three s.h. each: PY 511, PY 512, SC 576.
- III. Thesis (optional) — zero to four s.h.

Each student may undertake an individual research and complete an acceptable thesis under the direction of one of the Graduate Faculty. The semester hour requirement is fulfilled by enrolling in PY 850 for the proper number of semester hours as decided jointly by the student and his/her thesis adviser.
- IV. Subject Area and/or Electives — eight to fifteen s.h.

With the **written** approval of the graduate adviser, the student may complete the 30 s.h. requirement* by choosing from among any of the remaining courses in The Graduate School.

For description of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX course, SPECIAL EDUCATION.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

**If the option of "no thesis" is exercised, an additional three s.h. are required bringing the total requirement to 33 s.h.*

MASTER OF ARTS IN PHYSICS

This program is the most flexible of the three graduate degree programs offered by the Physics Department. Each student's program is designed to meet his or her individual needs by the student and adviser working together.

The educational goals of students in many categories can be met while the student is working to attain his/her degree. Several examples of the category of student who may select this degree program are:

1. The student whose undergraduate training is in Physics Education, Physical Science Education, or Science Education with a strong professional education component. This student may need more content than professional education. In this program the student may, with the concurrence of his/her adviser, enroll in exactly that ratio of content courses to professional education courses which are necessary to attain his/her goals.
2. The student who holds a teaching certificate in a field other than physics but is a secondary school physics teacher. These students often require formal coursework in a number of areas of physics in order to have physics added to their certificate. This is normally a requirement of their school district and/or the Commonwealth. This program allows them to meet this requirement while working toward a degree.
3. The student who wishes to enroll in a cooperative program including those programs with internship components. Students may earn 8-15 s.h. during a semester while interning under one of the special programs instituted by the University.

SUBJECT MATTER — 15 s.h. minimum.

Required coursework in Physics is to be selected from the Graduate Physics courses whose course number is 510 or greater. This selection must have the *prior* approval of the student's academic adviser and a notation of such approval is to appear in the student's folder.

ELECTIVES — 11 to 18 s.h.

The student may complete the requirements for an MA by selecting, with the approval of his/her adviser, from among the offerings of The Graduate School. The number of credits selected for electives depends upon the option exercised under Research and Thesis.

RESEARCH AND THESIS OPTION

Each Master of Arts student must complete degree requirements in one of the following two ways:

- A. Undertake an individual research problem and complete an accept-

able thesis. For this option the student must schedule PY 600 for two s.h. and PY 850 for at least two s.h. If he/she selects this option he/she will have completed a minimum of 30 s.h. including these two courses for the degree.

- B. Decide, with the approval of his/her academic adviser, that he/she does not wish to undertake such a research problem. If this option is exercised, the student will not do a thesis but must complete a minimum of 33 s.h. of coursework.

For description of PY 850, see page 00.

MASTER OF SCIENCE IN PHYSICS

- I. Admission Requirements. Any student meeting the requirements of The Graduate School and having either a BA or BS with the major in physics will be permitted to initiate study in this curriculum. Students having other degrees that provide sufficient preparation in mathematics and physics may be permitted to initiate study with approval of the chairperson of Physics.
- II. Subject Matter Concentration.
A minimum of six courses to be selected with the approval of the adviser from the following: PY 536, PY 601-602, PY 634, PY 641, PY 651, PY 652, PY 661-662.
- III. Research Requirement.
Each Master of Science student is required to undertake an individual research problem and complete an acceptable thesis under the direction of one of the Graduate Faculty. The semester hour requirement is normally fulfilled by scheduling PY 600 and PY 850.
- IV. Comprehensive Examination.
The student is expected to pass a comprehensive examination.
- V. Free Electives.
The student may complete the 30 s.h. requirement by choosing from among any of the offerings of The Graduate School, with, of course, the advice and approval of his/her graduate adviser.

For description of PY 850, see page 00.

COURSE DESCRIPTIONS

PY 507 INTRODUCTION TO MATHEMATICAL PHYSICS I 3 s.h.
Designed to provide background needed for most 500 level courses. Student will acquire skills in problem solving in areas of mechanics and wave motion utilizing calculus and vectors. Prerequisite: Permission of adviser.

PY 508 INTRODUCTION TO MATHEMATICAL PHYSICS II 3 s.h.
A continuation of PY 507. Develops skills in problem solving in areas of electricity and magnetism utilizing vectors and calculus. Prerequisite: Permission of adviser.

PY 510 INTRODUCTION TO THEORETICAL PHYSICS 3 s.h.
Application of mathematical methods to physical theory in area of mechanics, electricity and magnetism, including partial differentials, vector calculus, and non-cartesian coordinate systems. Intended primarily for individuals in the M.Ed. program. Prerequisite: Permission of adviser.

**PY 511 SECONDARY SCHOOL PHYSICS
LABORATORY PRACTICE** 1-3 s.h.

Designed not only to give the student training in use of PSSC and Harvard Project Physics laboratory materials, but also to increase his/her ability to make the lab a more effective teaching tool.

**PY 512 CURRICULUM DEVELOPMENTS IN
SECONDARY SCHOOL PHYSICS** 3 s.h.

Includes an intensive study of developments, such as PSSC and HPP. Philosophy, methodology and cognitive theory behind each curriculum will be considered. The lab equipment, experiments, and visual aids for each will be studied in their proper setting.

PY 520 ADVANCED LABORATORY PRACTICE 3 s.h.

Experimental Physics. Experiments are made available to supplement student's previous training. Data interpretation and experimental techniques are emphasized. Topics can include but are not limited to various methods of measurement and analysis of radioactivity, interferometry, spectrometry, microwave optics, NMR, mechanical vibrating systems, and thermal properties.

PY 531 MODERN PHYSICS 3 s.h.

An introduction to particle and wave properties of matter, atomic structure, quantum mechanics and the quantum mechanical model of the atom.

PY 533 THERMAL AND STATISTICAL PHYSICS 3 s.h.

A unified approach to study of thermodynamics through use of statistical mechanics. Temperature, entropy, chemical potential and free energy are introduced and applied to a monatomic ideal gas and systems of fermions and bosons in quantum and classical regions.

PY 535 ELECTRONICS 4 s.h.

DC and AC circuits, diode circuits, and transistors circuits, such as the common emitter and emitter follower amplifiers, are extensively covered. Negative feedback, operational amplifiers, oscillators, and digital logic are introduced. These topics are discussed in lecture and investigated by the student in the lab.

PY 536 ADVANCED ELECTRONICS 3 s.h.

Field effect transistors, noise problems, grounding and shielding, applications of digital logic, digital to analog to digital conversion techniques, transmission lines, and microprocessor applications. Two one-hour lectures and one three-hour lab. Prerequisite: PY 535.

PY 541 ANALYTICAL MECHANICS I 2 s.h.

Kinematics, particle dynamics, gravitation, free and forced harmonic motion. Treatment of these topics utilizes vector calculus and differential and integral calculus.

PY 542 ANALYTICAL MECHANICS II 2 s.h.

Central-force motion, high energy collisions.

PY 545 OPTICS 3 s.h.

Main concepts of modern optics utilized in areas of geometrical, wave and quantum optics. Includes presentation of illustrative examples in areas of laser technology, complex optical systems, interferometry, and spectroscopy.

PY 551 ELECTRICITY AND MAGNETISM I 2 s.h.

Coulomb's Law, electrostatic potential, Gauss' Law, dielectrics will be presented using vector calculus in a modern field formalism. Prerequisite: PY 510.

PY 552 ELECTRICITY AND MAGNETISM II 2 s.h.

Biot and Savart's Law, induced emf, vector potential, displacement current, special relativity, and electromagnetic radiation will be presented using techniques introduced in PY 551. Prerequisite: PY 551.

PY 561 QUANTUM MECHANICS I 3 s.h.

Introduction to theory of linear vector spaces, linear operators, eigenvalues, eigenvectors and eigenfunction and their application to the harmonic oscillator, hydrogen atom, electron in a magnetic field, scattering and perturbations. Prerequisites: PY 541 and PY 531 or equivalent.

PY 565 INTRODUCTION TO NUCLEAR PHYSICS 3 s.h.

Survey of introductory nuclear physics including: nuclear size, mass, types of decay, models, forces, elementary particles, reaction theory.

PY 599 SPECIAL STUDIES 1-6 s.h.

A special topic may be offered at the discretion of the department to fulfill a special necessity.

PY 600 METHODS OF RESEARCH IN PHYSICS 2 s.h.

Offers the student practical training in special methods and materials of research in physics. Emphasis on types of research, use of physics and physics-related journals and library facilities. Prerequisite: Permission of department.

PY 601 THEORETICAL PHYSICS I 3 s.h.

Serves as a preparation in mathematical physics for graduate student. Included will be vector analysis, curvilinear coordinate systems, infinite series, complex variables and the calculus of residues, ordinary and partial differential equations. Prerequisite: Permission of department.

PY 602 THEORETICAL PHYSICS II 3 s.h.

A continuation of PY 601, covering Tensor analysis, matrices, group theory, Sturm-Liouville theory, special functions, Fourier series, integral transforms, Green's functions, and integral equations. Prerequisite: PY 601.

PY 634 STATISTICAL MECHANICS 3 s.h.

A quantum approach to statistical mechanics. Fermi, Bose, ideal gas and imperfect gas systems are investigated. Selected topics in kinetic theory of gases, transport phenomena, magnetic systems and liquid helium. Co-requisite: PY 561 or its equivalent.

PY 641 ADVANCED MECHANICS I 3 s.h.

Includes the following topics: Lagrange's equations, Hamilton's Principle. Two body central force, Euler's Theorem, Small Oscillations, Hamilton's Equations, Canonical Transformations. Prerequisite: PY 542 or its equivalent.

PY 642 ADVANCED MECHANICS II 3 s.h.

Rigid body mechanics, including Angular Momentum, Euler's equations, Precessions, Special relativity, Covariant four dimensional formulation, Covariant Lagrangian formulation, Hamilton-Jacoby Theory, Introduction to classical field theory. Prerequisite: PY 641 or equivalent.

PY 651 ADVANCED ELECTROMAGNETIC THEORY I 3 s.h.

Solution of boundary value problems using Green's functions and separation of variables techniques. Cartesian and spherical coordinate systems, multipole expansions, macroscopic electrostatics and magnetostatics, Maxwell's equations and plane electromagnetic waves. Prerequisite: PY 552 or equivalent.

PY 652 ADVANCED ELECTROMAGNETIC THEORY II 3 s.h.

Solution of electrostatic problems using cylindrical coordinates. Green's function for time-dependent wave equation, conservation laws, wave guides and resonant cavities, Special Theory of Relativity, simple radiating systems and diffraction. Prerequisite: PY 651.

PY 657 SOLID STATE THEORY 3 s.h.

Quantum approach to solid state. Topics include second quantization of fermion and boson systems, electron theory of metals, electron-phonon interactions, and superconductivity. Selected subjects in thermal transport, magnetic phenomena. Co-requisite: PY 561 or its equivalent.

PY 661 QUANTUM MECHANICS II 3 s.h.

Fundamental concepts of quantum mechanics, theory of representations and linear vector spaces, relationship between quantum and classical mechanics. Approximation methods for stationary problems with applications to central potentials. Prerequisite: PY 561 or its equivalent.

PY 662 QUANTUM MECHANICS III 3 s.h.

Approximation methods for time dependent problems with application to scattering and transition theory. Elementary theory of many particle systems with applications to: molecules and chemical bonds, fundamentals of the quantum theory of solids, Dirac theory. Prerequisite: PY 661.

PY 690 RESEARCH PROBLEMS IN PHYSICS 1-6 s.h.

Introduction to advanced research problems through individual assignment. Prerequisite: Permission of department.

SCIENCE COURSES

SC 575 THE GROWTH OF SCIENCE AND ITS CONCEPTS I 3 s.h.

Traces development of science and its concepts from early beginnings to time of Newton. Interaction of science and math and their impact on growing society of Western Civilization is treated in a non-mathematical manner. Three hours lecture per week.

SC 576 THE GROWTH OF SCIENCE AND ITS CONCEPTS II 3 s.h.

Influence and development of concepts of science in Western Civilization are studied from Newton to present time. While the concurrent development of mathematics is considered, stress is placed on the non-mathematical understanding of basic concepts. Three hours lecture per week.

POLITICAL SCIENCE

The Political Science Department offers the MA in Public Affairs degree, with concentrations in Public Administration and International Affairs.

MASTER OF ARTS IN PUBLIC AFFAIRS

The MA in Public Affairs program is designed for part-time and full-time students who are seeking or are currently engaged in professional careers as administrators, project directors, staff analysts, supervisors in government and human service agency delivery systems, teachers of the social studies, and those interested in international affairs.

The MAPA requires a **minimum** of 30-36 graduate credits, including

a research or internship requirement. The entering student should have sufficient preparation in the social sciences, or in equivalent professional experiences, necessary for satisfactory performance in the program. In some cases this may require specific courses not for graduate credit. Preparatory requirements, if any, will be determined by the Political Science Department and the Graduate School and may be completed after admission to the Graduate School, but prior to admission to candidacy for the degree.

DEGREE REQUIREMENTS: Students may elect to concentrate in *one* of two areas: **(A) Public Administration** (36** credits) or **(B) International Affairs**. (30 credits plus Foreign language competence)

A. PUBLIC ADMINISTRATION (36 credits minimum)**

1. **Research Methods** (3-9 credits minimum): PS 674 or *GE 612, and **CO 502, and **GR 516 or 517.
2. **Required Core Courses** (15 hours): ***PS 570, ***PS 571, PS 666, PS 668, PS 673, or PS 555.
3. **Research Requirement** (3-6 credits). Students must complete an Internship including a Research Project. The Internship will, when appropriate, be supervised by the student's sub-field advisor or department designee. A field-based research project may be substituted for the internship requirement upon prior approval by the sub-field concentration department chairman and the MAPA program director.
4. **Subfield Concentration** (15 credits minimum): Students must select one of the following sub-field concentrations with advice from a sub-field concentration advisor: **Police Administration or Correctional Management; Planning or Regional Development; Human Services Administration; Personnel Administration; Municipal Management**. (See Director of MAPA Program for current list of required courses and additional options for sub-field concentrations.)

B. INTERNATIONAL AFFAIRS CONCENTRATION (30 credits minimum)

1. **Required Courses** (24 credits minimum): Twenty-four (24) semester hours of primarily Political Science courses as a minimum. At least half of these must be in the international and comparative area and should include **three** of the following courses: PS 520, PS 521, PS 589, PS 670, PS 672. The remainder may be selected from area studies and (with advisor approval) from international or comparative courses in other Departments. For students preparing for International Service, courses in Public Administration and/or Public Policy Analysis are strongly **recommended**.
2. **Foreign Language Reading Competency**, established by Examination.

*May be taken **only** by those students with subfield concentrations in Planning or Regional Development.

**If a student can demonstrate proficiency in statistics or has taken an undergraduate course in computer science, the hours required to complete the degree will be reduced from 42 to either 36 or 39 hours.

***May be waived if taken as an undergraduate, and another course(s) substituted.

3. Research Requirement (6 credits minimum):

- a. **Methods Course:** SS 614 or GR 615 (or a Social Science Research Methods course, approved by advisor, such as PS 674) 3 credits, and **Thesis** (PS 850) or **PS Internship** (PS 695) with Research Project (3 credits minimum).

COURSE DESCRIPTIONS

PS 520 INTERNATIONAL LAW 3 s.h.

Study of the development, nature, and function of international law, including recent trends.

PS 521 INTERNATIONAL ORGANIZATIONS 3 s.h.

Inquiry into purposes, structures, and actions of contemporary international political organizations, such as United Nations, regional and functional organizations.

PS 544 SCIENCE/TECHNOLOGY AND PUBLIC POLICY 3 s.h.

Focuses on the interactions of science/technology and politics as they impinge on the public decision-making process. Technology generated socio-political problems are investigated on local, state, national, and international level; the adequacy of political processes and institutions for solving problems in the technological age is questioned.

PS 550 THE PRESIDENCY 3 s.h.

Examines the Office of President with attention to constitutional foundations, evolution, structure powers, and functions. Comparisons are made between presidential and parliamentary systems and between offices of President and Governor.

PS 551 THE LEGISLATIVE PROCESS 3 s.h.

Legislative process in the U.S. with emphasis on Congress. Focus on organization and function of legislative bodies, with American legislative institutions compared with those of other nations.

PS 552 PUBLIC OPINION 3 s.h.

Nature of public opinion within political system. Attention to formation of public opinion, expression, propaganda, mass media, interest groups, and polling.

PS 553 AMERICAN POLITICAL PARTIES 3 s.h.

Role of people, parties, and pressure groups in politics of American democracy. Attention to sectional and historic roots of national politics, voting behavior, pressure group analysis, and campaign activities.

PS 554 METROPOLITAN PROBLEMS 3 s.h.

Analyzes multiplicity of problems facing our metropolitan areas such as urban renewal, shrinking tax base, federal aid to cities, subsidized mass transit, municipal authorities, and political consolidation.

PS 555 FEDERALISM 3 s.h.

Explores the characteristics of federal system of government with emphasis on theories, origins, institutions, and problems in intergovernmental relations in the U.S.; federal systems in other nations; and trends.

PS 556 MASS MEDIA IN AMERICAN POLITICS 3 s.h.

Variant theories of the symbiotic relationship between American politics and the press are examined in the light of the American colonial-national experiences. The special constitutional rights given to the media are explored, with particular attention to radio-TV.

PS 557 LABOR AND BUSINESS IN POLITICS 3 s.h.

An in-depth study and analysis of labor and business involvement in politics is the focus of the course. Special attention will be given to the involvement of labor and business in Pennsylvania politics as well as to the relationship between the two competing groups—conflict or cooperation.

PS 558 JUDICIAL PROCESS 3 s.h.

Explores nature and limits of judicial power, courts as policy-making bodies, selection of judges, decision process, external forces impinging on the courts, and role of Supreme Court in its relationship with Congress, the Presidency, and federalism.

PS 559 CONSTITUTIONAL LAW AND CIVIL LIBERTIES 3 s.h.

Study of civil liberties and civil rights issues through leading Supreme Court decisions. Topics include First Amendment rights, procedural due process and the Bill of Rights, and equal protection problems.

PS 560 CLASSICAL POLITICAL THOUGHT 3 s.h.

Evolution of Western political tradition of Constitutionalism from Plato and Aristotle to Locke and Montesquieu; religious and rational foundations; medieval theories of authority and representation; early modern theories of state and sovereignty. Concepts of law, natural rights, liberty, equality, and justice are treated in detail.

PS 561 MODERN POLITICAL THOUGHT 3 s.h.

Development of Western political thought since the mid-16th century; classic liberalism conservative thought; modern irrational ideologies such as fascism and national socialism; socialist thought; contemporary collectivist liberalism.

PS 562 AMERICAN POLITICAL THOUGHT 3 s.h.

Develops an understanding of American political thinkers from the Puritans through the current Afro-American writers. Political phenomena is examined relating to past writings and inferences are made for future political behavior.

PS 570 INTRODUCTION TO PUBLIC ADMINISTRATION 3 s.h.

Examines the environment of public administration; organizational structure, executive functions, the politics and tools of administration, personnel processes, financial administration and the problems of democratic control of bureaucracy.

PS 571 ISSUES IN PUBLIC ADMINISTRATION 3 s.h.

Intensive study of role of agencies and their administrators in determining and developing public policy. Public administration in practice is emphasized by utilizing case studies.

PS 580 SOVIET POLITICS 3 s.h.

Essential features of Communist party and government of U.S.S.R., including geographical and historical background and ideological and theoretical foundations.

PS 581 SPECIAL TOPICS 1-3 s.h.

In-depth study of a specific problem or topic not regularly treated in courses. May be repeated.

PS 582-587 POLITICAL STUDIES 3 s.h.

Comparative study of government and politics of a selected region.

PS 582 AFRICA

PS 583 ASIA

PS 584 MIDDLE EAST

PS 585 CENTRAL AND EASTERN EUROPE

PS 586 ATLANTIC COMMUNITY

PS 587 LATIN AMERICA

PS 588 POLITICAL-MILITARY STRATEGY 3 s.h.

Deals with national security problems including decision-making and budgeting, levels of strategy, the utility of force, and the impact of the military on American Society.

PS 589 DEVELOPING NATIONS 3 s.h.

Deals with the political characteristics of emerging nations; the impact of economic and social change upon political structure; evolving patterns of political development; and techniques of nation-building.

PS 631 HUMAN RESOURCE MANAGEMENT IN PUBLIC SECTOR 3 s.h.

In-depth study of human resource management systems with special focus on public sector organizations. Emphasized will be the development of an understanding of traditional functional systems as well as skills necessary to successfully manage such systems.

PS 666 PUBLIC POLICY ANALYSIS 3 s.h.

Examines public policy using analytical tools and policy models. Considered within this framework are values and resources, the cultural-political environment, the policy-making process, evaluation methods and their application to major policy areas.

PS 668 PUBLIC SECTOR FINANCIAL ADMINISTRATION 3 s.h.

Concerned with the administration of fiscal and monetary processes of government at all three levels. Included are topics related to revenue and expenditure, how the former are calculated and provided for, and how the latter are prioritized and allocated via the budgetary process; and control systems which are concerned with record keeping and the monitoring of the flow of revenues.

PS 670 FOREIGN POLICY STUDIES 3 s.h.

Considers selected problems in international affairs. Emphasis on those problems and conflicts which have evolved in the post-war era, particularly as they related to position of the United States in world affairs. Specific problems are approached both in terms of countries involved and the existing balance in world economic, ideological, and power structure.

PS 672 COMPARATIVE POLITICAL STUDIES 3 s.h.

Theory, structure, politics, and problems of selected foreign governments are analyzed from comparative point of view. Special emphasis on comparing and contrasting ideas and institutions with those of the U.S.

PS 673 REGIONAL POLITICAL STUDIES 3 s.h.

Examines structure and function of state, county, and municipal governments. Emphasizes understanding and analysis of problems faced by government at local levels. Pennsylvania governmental forms are stressed and compared with those of other states.

PS 674 ANALYTICAL TECHNIQUES 3 s.h.

Exposes the student to approaches, methods, tools, focus, and boundary lines of political science study. As a research methods course in graduate political science, it should be scheduled early in program.

PS 681 SPECIAL TOPICS 1-3 s.h.

In-depth study of a specific problem or topic not regularly treated in courses. May be repeated.

PS 695 POLITICAL SCIENCE INTERNSHIP

3-6 s.h.

Practical experience in government and politics. Students are individually assigned to a cooperating local or state government agency, political party, or interest group, or to a federal or international agency when arrangements can be made. Students report periodically to professor in charge, and undertake reading assignments and write such reports and papers as the professor may require. Prerequisite: Must have approval of instructor and department chairman.

PS 699 INDEPENDENT STUDY

1-3 s.h.

Readings and written assignments on a specific topic determined by student and instructor in charge. May be repeated.

PS 850 THESIS

3 s.h.

NOTE: No more than 50 per cent of credits counted toward graduate degree may be in 500-level courses.

PROFESSIONAL GROWTH

The Professional Growth program leading to an MA, MS, or MEd is a highly restricted and specially structured course of studies determined by the student and his/her advisory committee. A four s.h. committee thesis is required, as well as the course GR 615, Elements of Research. For further information, write Professional Growth Degree, The Graduate School, IUP, Indiana, PA 15705.

PSYCHOLOGY

The Psychology Department offers a Doctor of Psychology degree in Clinical Psychology (Psy.D.) and Master of Arts degrees in Community Psychology and Experimental Psychology. The Psy.D. includes specializations in such areas as Behavioral Medicine, Child, Assessment, Psychotherapy, and Community Systems. The program is designed to meet the academic requirements of licensure and provide the background to immediately assume responsibilities in appropriate professional settings. The M.A. program in Community Psychology specializes in evaluation research and organizational psychology and prepares students for a wide range of positions in human services, government, and industry. The Master of Arts in Experimental Psychology is offered only on an occasional basis when a student's research interests closely match those of a faculty member.

The department also offers courses open to students in other graduate programs in the Graduate School.

MASTER OF ARTS IN COMMUNITY PSYCHOLOGY

Admission

The following criteria are used to evaluate applicants: a) overall grade point average and grades in psychology courses; b) GRE scores (500 minimum on quantitative portion of the aptitude test); c) statement of goals; d) previous research and community experience; and, e) letters of recommendation.

The deadline for receipt of all application materials is March 15. Late applications will be considered if space permits.

Philosophy

The M.A. program provides training in the planning and development of human service programs, program evaluation, and the implementation of human service innovations. The skills obtained are applicable to a variety of local human service, government, and private industry settings. The program is not a clinical/community program, and it does not provide direct clinical "client contact" experience.

Curriculum

The M.A. Program in Community Psychology requires the completion of 45 credits and takes approximately two years of full-time study to complete. The minimum required courses are: PC 601, PC 602, PC 603, PC 650, PC 569 or PC 654, and Advanced Psychology Practicum (PC 675) for 9 to 12 credits. The remaining credits are taken as electives either in the Psychology Department or in other departments in the University. Students are expected to develop a content area specialty based on their electives and practicum. In addition to coursework, students must complete a 6-credit thesis.

Candidacy

After completion of 18 hours of graduate work at IUP including PC 601, PC 602, PC 603, PC 650, and PC 569 or 654, the student must formally apply for candidacy to the department's Community Program Committee for admission to degree candidacy. For approval the applicant must have attained at least a 3.0 QPA, have at least a B in each of the required courses taken, present satisfactory scores on the GRE, and receive satisfactory recommendations from faculty members familiar with his/her work.

Part-time Study

Applicants for part-time study are welcome. Upon acceptance, the part-time student must prepare, in consultation with an advisory committee, a program of study that will result in completion of degree requirements within three years. With permission of the Community Program Committee, a portion of the practicum requirement may be waived. In some circumstances it may be possible for a student to receive practicum credit for his/her supervised work while a student in the program.

DOCTORATE IN CLINICAL PSYCHOLOGY

Admission to the Psy.D.

The following criteria are used in the evaluation of application materials: (a) overall grade point average and grades in psychology courses (3.00 minimum in both areas); (b) scores on the Aptitude and Advanced sections of the GRE (average of 500 on all sections); (c) training in research methodology; (d) prior clinical experience in practicum or employment; (e) the applicant's statement of goals; (f) letters of recommendation; and, (g) results of a personal interview.

Breadth of undergraduate training is preferable to narrow specialization. Weaknesses in one area may be offset by strengths in another area, although the Admissions Committee gives preference to applicants with some demonstrated strengths in all areas. Students may be required to make up deficiencies.

The deadline for receipt of all application materials is January 25. The Admission Committee will then select a pool of qualified applicants who will be invited to the campus for personal interviews. Announcements of final admission decisions will be made around April 1.

Philosophy

The Psy.D. program follows a practitioner or applied model of training of clinical psychologists. Emphasis is placed on professional applications of psychology to a wide variety of human problems. Students receive extensive supervision in the development of skills in interpersonal relations, psychological assessment, psychotherapy, community outreach and program evaluation, and a solid grounding in the scientific knowledge base of psychology.

Curriculum

The Psy.D. program is designed to be completed in three calendar years of full-time study plus an additional year of full-time internship. The curriculum requires a minimum of 93 semester hours of acceptable graduate credit. Each student must complete requirements for: (a) core coursework; (b) specialty requirements; (c) Practicum, Internship and Professional Issues; (d) Doctoral Project; (e) Comprehensive Academic and Professional Examination; and, (f) master's and doctoral candidacy. In addition, a course in History and Systems in Psychology is required for graduation. This course may be taken prior to or during enrollment.

A. Core Coursework.

The core courses are required of all students. These courses cover several areas of Psychology and provide the foundation for professional practice.

1. **Methods of Behavior Change:** PC 630, PC 631, PC 632, PC 633, PC 634.
2. **Methods of Assessment and Evaluation:** PC 641, PC 642, PC 643.
3. **Research and Methodology:** PC 601, PC 604.
4. **Individual Differences:** PC 635, PC 636, PC 637.
5. **Physiological Bases of Behavior:** PC 646, PC 647.
6. **Community and Systems Level of Intervention:** PC 603, PC 650.

B. Specialty Areas: 3 to 5 courses.

Examples of specialty areas are Behavioral Medicine, Child Clinical, Assessment, Psychotherapy, Organizational/Industrial, or Community and Systems. No more than two required courses may be counted in a specialty, and courses from outside the Psychology Department may be included with permission of the advisor.

C. Practicum, Internship, and Professional Issues: (24 credits) PC 670, PC 675, PC 676.

Students will typically register for practicum experience throughout their program with sampling from diverse settings. During the final year a full-time professional internship emphasizing depth and long-term involvement will be required.

D. Doctoral Project: (9 credits) PC 950.

E. Comprehensive Academic and Professional Examination: no credit.

At the end of each year an evaluation of clinical and professional competence will be made. This evaluation data will be shared with the student as feedback, and a joint effort will be made to remediate any deficiencies.

Students must also pass a comprehensive examination over basic knowledge appropriate for a professional psychologist. This examination will cover material related to any of the core coursework areas. Students will have options of questions within the content areas.

Satisfactory performance on both the comprehensive examination and the professional evaluations must be achieved before candidacy for the doctorate will be recommended. Serious deficiencies may result in recommendations for remedial work, re-examination, delay of candidacy, or termination from the program.

F. Master's and Doctoral Candidacy.

Students will routinely obtain the Master's degree enroute to the doctorate. Requirements for candidacy to the MA degree are the successful completion of 24 credits of approved graduate coursework with an average of 3.00 GPA and the recommendation of the Clinical Training Committee based on satisfactory academic and professional evaluations. The MA in clinical psychology will be awarded after the successful completion of 54 semester hours and satisfactory annual academic and professional evaluations. The 54 credits must include 9 hours of practicum and the core coursework of the Psy.D. degree.

The candidacy for the Psy.D. will be awarded following the completion of all MA requirements plus a minimum of an additional 9-15 credits, successful performance on the comprehensive examination, and satisfactory annual academic and professional evaluations. An average GPA of 3.00 is required for candidacy.

G. Transfer of Graduate Credit.

Applicants who have completed graduate coursework at other institutions may request transfer of credit. A maximum of 36 semester hours of credit may be approved. A portion, but not all, of the practicum requirements may be transferred for equivalent supervised experience.

H. Part-time Study and Residency.

Students must complete two semesters or one summer plus one semester in sequence of full-time study to meet residency requirements. At other times students may complete part-time studies. Part-time students must complete a Plan of Study which will include a detailed semester-by-semester outline of proposed coursework and completion dates for Comprehensive Exams, Doctoral Project, and Internship. An average of 15 semester hours

of credit must be completed each year, and all requirements must be completed within seven years.

COURSE DESCRIPTIONS

PC 510 HISTORICAL TRENDS IN PSYCHOLOGY 3 s.h.
Comprehensive overview of historical antecedents of contemporary psychology.
Prerequisite: Permission.

PC 554 DEVELOPMENTAL PSYCHOLOGY 3 s.h.
A comprehensive study of human growth and development from conception to death.
Major research findings and developmental theories will be considered.

PC 556 THE PSYCHOLOGY OF PERSONALITY 3 s.h.
An overview of integration of the major theories of personality.

PC 557 ABNORMAL PSYCHOLOGY 3 s.h.
Theories of pathological behavior with reference to clinical and experimental data.

PC 558 SOCIAL PSYCHOLOGY 3 s.h.
A scientific approach to the study of behavior and experience of individuals in relation to other individuals, groups and culture.

PC 561 MOTIVATION 3 s.h.
A systematic study of how behavior is initiated, sustained, directed, and terminated.
Lab projects are conducted. Prerequisite: Permission.

PC 562 PHYSIOLOGICAL PSYCHOLOGY 3 s.h.
The relationship between behavior and the anatomy and physiology of the nervous system. Lab projects are conducted. Prerequisite: Permission.

PC 563 HUMAN COGNITION: PERCEPTION 3 s.h.
The interaction of sensory and cognitive events in production of awareness of the world. Lab projects are conducted. Prerequisite: Permission.

PC 564 PSYCHOPHARMACOLOGY 3 s.h.
Survey of the theoretical and empirical foundations of psychopharmacology. Topics include discussions of basic principles of pharmacology, theories of drug action, structure and function of the nervous system with special emphasis on current findings on neurotransmitters and the site of action of psychoactive drugs. Prerequisite: Permission.

PC 565 CONDITIONING AND LEARNING 3 s.h.
The focus is on animal research with discussion of classical and operant conditioning, discrimination learning and aversive control of behavior. Lab projects are conducted. Prerequisites: Courses in experimental psychology or permission.

PC 566 HUMAN COGNITION: MEMORY AND THINKING 3 s.h.
The methodology employed in areas of verbal learning and retention, encoding, storage, and retrieval processes. Lab projects are conducted. Prerequisite: Permission.

PC 567 ANIMAL BEHAVIOR 3 s.h.
Behavior of various animal species and man are examined from the position of evolution of behavior as adaptation to a changing ecology.

PC 569 INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY 3 s.h.
Study of psychological principles in an organizational setting of behavior, application of psychological principles to individual behavior and experience in organizations.

PC 574 ADULT DEVELOPMENT AND AGING 3 s.h.

A review of theories and research which apply to young, middle, and later adulthood, with particular emphasis on old age.

PC 578 PSYCHOLOGY OF DEATH AND DYING 3 s.h.

Emphasizes the theories and research which delineate the psychological factors affecting the dying person as well as those people close to someone who is dying. Psychological, social and cognitive factors affecting one's attitude toward death and approaches to coping with dying and death are studied. Prerequisite: Permission.

PC 581/681 SPECIAL TOPICS 3 s.h.

Designed to examine a special topic in depth. Students prepare presentations representing selected research areas. Prerequisite: Permission.

PC 600 INTRODUCTION TO HUMAN COGNITION 3 s.h.

The methodology employed in areas of verbal learning and retention, encoding, storage, and retrieval processes. Lab projects are conducted. Prerequisite: Permission.

PC 601 RESEARCH METHODS IN PSYCHOLOGY I 3 s.h.

The design, statistical analysis, and report of laboratory experiments will be studied. Prerequisite: Permission.

PC 602 RESEARCH METHODS IN PSYCHOLOGY II 3 s.h.

An intuitive presentation of the methods, the use of computer programs, and applications of psychological research of selected multivariate techniques. Prerequisites: PC 601 or equivalent familiarity with analysis of variance and correlation or regression techniques.

PC 603 EVALUATION RESEARCH 3 s.h.

Introduction to the methodological issues involved in validly assessing the effectiveness of intervention programs relevant to psychology (e.g., human service programs), including a consideration of how the results of evaluation research can be used to improve such programs. Students will participate in either actual or simulated evaluation research projects. Prerequisite: Permission, PC 601 or equivalent.

PC 604 CLINICAL RESEARCH METHODS 3 s.h.

Introduction to data analysis techniques and methodological problems commonly encountered in clinical research. Methods appropriate for single subjects as well as groups are explored. Prerequisites: PC 601, 641.

PC 630 METHODS OF INTERVENTION I 3 s.h.

Methods of studying and improving competency in interpersonal skills as a necessary ingredient in most models of therapy, such as psychoanalysis, client centered, and behavior modification. Emphasis placed on theory, research, and personal competence in communication. Prerequisite: Permission.

PC 631 METHODS OF INTERVENTION II 3 s.h.

Emphasis is placed upon the systematic study and application of social influence techniques to the modification of clinical problems. A broad spectrum of cognitive, physiological and behavior change procedures are studied and evaluated with regard to their cost and effectiveness. A general problem-solving model for decision making, case evaluation, and accountability is advanced. Prerequisites: PC 630, permission.

PC 632 PRINCIPLES OF BEHAVIOR MODIFICATION 3 s.h.

Applications of learning theory principles in changing maladaptive behavior both on the individual and group units. Prerequisite: Permission.

PC 633 CLINICAL GROUP TECHNIQUES 3 s.h.

Provides instruction and experience in a variety of group techniques. Includes lectures, demonstrations, and participation in group exercises useful in the clinical psychology profession. Prerequisite: Permission.

PC 634 FAMILY THERAPY 3 s.h.

Introduction to family and marital therapy. Both system theory approaches and behavioral approaches will be considered. Process and outcome research will be reviewed. Prerequisite: Permission.

PC 635 ADVANCED PSYCHOPATHOLOGY 3 s.h.

An in-depth study of the description, causes, and treatment of behaviors considered abnormal by our society. The course integrates and extends previous materials in abnormal behavior, assessment, therapy, research methodology, and professional practice. Prerequisites: Previous undergraduate course in Abnormal Psychology; permission.

**PC 636 PERSONALITY THEORY AND SYSTEMS
OF PSYCHOTHERAPY** 3 s.h.

Several major personality theories are reviewed in a comparative manner with emphasis placed upon issues such as the assumptions about the basic nature of man, personality development, normal and pathological development, and philosophy of treatment for each theory. Prerequisite: Permission.

PC 637 ISSUES IN DEVELOPMENTAL PSYCHOLOGY 3 s.h.

The processes and structures of life span development are studied. Cognitive, emotional, social and physical development will be explored emphasizing the interactive effects of the person's environment, developmental level and psychological state. Prerequisite: Permission.

PC 641 PSYCHOLOGICAL ASSESSMENT I 3 s.h.

Beginning course in theoretical issues and development of skills in assessing psychological functioning and in report writing. Beginning emphasis on intellectual assessment followed by the development of an increasing variety of assessment tools. Prerequisite: Permission.

PC 642 PSYCHOLOGICAL ASSESSMENT II 3 s.h.

Continuation of PC 641 with increased emphasis on development of skills in areas of objective and projective tests, behavioral observations, and self-report measures, and other assessment techniques. Prerequisites: PC 641, permission.

PC 643 PSYCHOLOGICAL ASSESSMENT III 3 s.h.

Continuation of PC 642 with emphasis on non-traditional assessment methods such as family observations, mental status rating, and social skills assessment. Topics in clinical judgment and inference, combination of assessment data and report writing are covered. Prerequisite: PC 642 or permission.

PC 646 DRUGS AND BEHAVIOR 3 s.h.

Introduction to various aspects of drugs and behavior. Includes exploration of factors influencing drug effects, problems in drug research, therapeutic use of drugs, legal use and abuse of drugs and social aspects of drug experience. Prerequisite: Permission.

PC 647 CLINICAL NEUROPSYCHOLOGY 3 s.h.

The study of the relationship between human brain dysfunction and abnormal behavior. Includes assessment techniques used to diagnose brain damage. Prerequisite: Permission.

PC 650 COMMUNITY PSYCHOLOGY 3 s.h.

An introduction to community psychology as an ecological approach to the understanding and changing of behavior; an emphasis on prevention rather than treatment of disorders, and a concern with the development of programs to deal with a wide variety of human problems.

PC 651 PLANNED SOCIAL CHANGE 3 s.h.

Comparative evaluation of strategies for changing human behavior. Emphasis on techniques which alter the environmental context in which the behavior occurs.

PC 652 ENVIRONMENTAL PSYCHOLOGY 3 s.h.

The relationship between human behavior and its environmental context. Emphasis on the role of physical and social environments in creating and perpetuating social problems.

PC 654 THEORY AND RESEARCH IN ORGANIZATIONAL PSYCHOLOGY 3 s.h.

The study of the effects of the work situation and of personal, interpersonal, and structural variables upon individual behavior and experience in organizations. Prerequisite: Industrial psychology or industrial sociology, introductory coursework in psychology and in behavioral science statistics.

PC 660 CHILD CLINICAL PSYCHOLOGY 3 s.h.

Approaches unique to child psychopathology, assessment and intervention are explored. Ages from birth to adolescence are covered. Prerequisite: PC 637 and PC 643 or permission.

PC 661 PSYCHOLOGY AND MEDICINE 3 s.h.

This course evaluates the clinical use of, and the experimental basis for, the use of techniques derived from general psychology for the evaluation, prevention, management, and treatment of health-related problems. The role of psychological and environmental variables in the development, maintenance, and recovery from physical disease is studied. Prerequisite: Permission.

PC 662 BIOFEEDBACK PROCEDURES IN BEHAVIORAL MEDICINE 3 s.h.

Procedures used to help individuals increase voluntary control of physiological activities are reviewed and evaluated as regards their clinical potential for treating a variety of psychosomatic and somatopsychic illnesses. Theory and research from the fields of medicine, biomedical engineering, psychophysiology, and cognitive-behavior therapy are incorporated in developing therapeutic applications of Biofeedback Techniques. Prerequisite: Permission.

PC 670 PROFESSIONAL ISSUES 3 s.h.

An examination of professional problems in the field of clinical psychology. Includes topics such as training philosophies; licensure; legal issues such as involuntary commitment and expert witness; ethical standards; and professional organizations. Prerequisite: Permission.

PC 675 ADVANCED PSYCHOLOGICAL PRACTICUM 1-18 s.h.

Provides supervised experience in applied settings. Prerequisite: Permission; variable credit depending on setting.

PC 676 INTERNSHIP 3 s.h.

An in-depth supervised experience designed to assure a professional level of competence in several skill areas and to assist in developing an identity as a health care professional. May be taken full-time for 12 months or half-time for 24 months. Prerequisite: Permission.

PC 699 INDEPENDENT STUDY IN PSYCHOLOGY 1-6 s.h.
Individual students develop and conduct research studies in consultation with a faculty member. Prerequisite: Permission.

PC 850 THESIS 1-6 s.h.
A supervised research project approved by a committee of faculty members. A thesis proposal must be approved by the end of the third full semester of graduate work, and the finished thesis must be defended within the following year. Enrolled as 3 s.h. during two semesters.

PC 950 DOCTORAL PROJECT (DISSERTATION) 3-9 s.h.
A culminating scholarly activity requiring the mastery of an area of professional interest. It requires a review of relevant literature and the collection and analysis of data. An oral presentation of the proposal and an oral defense of the finished project are required.

Other Policies

The Psychology Department has established guidelines for the registration and completion of the thesis and doctoral project, transfer to another concentration within the Psychology Department, academic good standing, full-time student status, an appeals process, and other academic matters. These guidelines are explained in the *Psychology Graduate Student Handbook*.

READING

IUP provides and directs the formal learning experiences of the Reading Specialist and Reading Supervisor at the graduate level. These learning experiences entail classroom and clinical instruction and field experiences by faculty members who are sincere and dedicated to the students and the programs. In addition, the faculty members represent a marked balance with a variety of backgrounds and areas of expertise—reading, elementary and secondary education, psychology and reading research.

Students seeking a Master of Education degree with a major in reading and who desire certification as Reading Specialists are required to complete a minimum of 36 s.h. of course work selected from the curriculum designed for the preparation of Reading Specialists.

A student who wishes to secure reading specialist certification and does not desire a Master of Education degree may do so by completing a minimum of 24 s.h. of coursework. The program for each student will be formulated based on the student's needs, educational experiences and teaching experiences. All students who desire certification are required to either take the required courses as outlined in Program for Reading Specialist or demonstrate or document the competencies required in the program.

Criteria for final recommendation for certification of program enrollees are as follows:

1. Mastery of competencies determined through the use of oral and/or written examination administered by Reading Faculty. Overall grade point average of B; in both ED 602 and ED 603, a grade of B is required.
2. Recommendation of Reading faculty.

Graduate students may also earn a Doctorate in Elementary Education with an emphasis in Reading.

Procedures for Admission

An applicant must first be admitted to The Graduate School as a qualified student. Upon receipt of an acceptance letter the Coordinator of the Graduate Reading Program will send the applicant the necessary forms for the Reading Program and the name of his/her adviser. Applicants may be requested to report for an interview with the Reading Faculty.

Upon admission to the Reading Program, each student should arrange to meet with his/her adviser to formulate an approved program of courses.

Acceptance into The Graduate School only permits a student to take course work in a department. If a student wishes to become a degree candidate, he/she must complete the Application to Candidacy form and forward this form to The Graduate School within the first 12 s.h. of course work in the department.

MASTERS IN READING/READING SPECIALIST PROGRAM

Certification Program: Courses

Students seeking certification as a Reading Specialist must complete a minimum of twenty-four (24) semester hours or its equivalent.

- A. Reading Required (15 s.h.)
(three s.h. each) ED 510, ED 600, ED 601, ED 602, ED 603.
- B. Research — Required (3 s.h.)
ED 698 or EL 680.
- C. Related Area — Select One (3 s.h.)
EP 604, EP 673, EP 676, EP 678, EP 680, CE 629, CE 639, EX 631.
- D. Electives — Select One (3 s.h.)
ED 508, ED 605, ED 607, ED 620, ED 696, ED 697, EL 644, EL 647, EL 648, EL 655, EN 631, EX 631, EX 665, EX 666.

Students who wish a Master's Degree in Reading must complete twelve (12) additional credits from the following areas:

- E. Research — Required (3 s.h.)
GR 615.
- F. Humanistic Studies — Select One (3 s.h.)
FE 611, FE 612, FE 613, FE 614.
- G. Electives — Select Two (6 s.h.)
Refer to Category D
If thesis option is selected, minimum is 5 s.h.

For description of FE courses, see section on FOUNDATIONS OF EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX courses, SPECIAL EDUCATION; for EL courses, ELEMENTARY EDUCATION; for EN courses, ENGLISH.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

A student with previous graduate work, vast educational experience and/or six- to nine-credit hours in undergraduate courses in reading may opt to challenge Education 600. When this is done successfully the student seeking certification only may 1) waive that requirement, or 2) pay for the

course and have the credits recorded on his/her transcript. Students seeking a Master's Degree will substitute another three-credit course in reading to meet the 36-hour requirement for a Master's Degree at IUP.

READING SUPERVISOR

Students may pursue the Reading Supervisor's Program by selecting courses from the following sequence of courses. Students must have a Master of Education Degree and certification as a reading specialist. Before completion of the program students must have had five years teaching experience in the area of reading to be eligible for the supervisor's certificate.

CERTIFICATION PROGRAM (18 semester hours) (12 semester hours required classes)

A. Required Courses: EL 631; EL 653; ED 670; EP 662 or CE 629.

B. Electives: (Select Two) ED 604; ED 605; ED 620; ED 699; ED 697; EL 632; EL 644; CE 645; EL 652.

For description of EL courses, see section on ELEMENTARY EDUCATION; for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION.

DOCTORAL DEGREE IN ELEMENTARY EDUCATION WITH EMPHASIS ON READING

Graduate students who are interested in working for a Doctorate in Elementary Education with an emphasis in Reading may choose one of three options.

Option 1

Emphasis in Reading which will lead to certification as a Reading Supervisor. (This pre-supposes that the candidate will have Reading Specialist certification.)

Option 2

Emphasis in Reading which will lead to certification as a Reading Specialist.

Option 3

Emphasis in Reading which does not involve certification; for this program students will be expected to take 15-21 hours in "Reading electives."

COURSE DESCRIPTIONS

ED 508 READING IN THE CONTENT AREAS

3 s.h.

Provides techniques for reading specialists to work with teachers in both elementary and secondary schools for developing competencies in subject matter areas as part of the regular classroom instruction. Open, also, to classroom teachers—elementary and secondary levels.

ED 510 THE TEACHING OF READING IN THE SECONDARY SCHOOL

3 s.h.

Emphases include reading improvement practices with developmental, corrective and remedial readers in the middle, junior and senior high schools. Attention to both college, preparatory students and those needing survival skills as well as to work with related professional personnel. A mini-practicum in developmental reading is included.

ED 600 BASIC FOUNDATIONS OF READING INSTRUCTION 3 s.h.

Emphases on nature of reading process; nature of learner; advancement of pupil's reading skills; how pupil learns to read; what teacher can do when pupils fail to learn to read.

ED 601 DIAGNOSIS AND REMEDIATION OF READING DISABILITIES 3 s.h.

Students will appraise reading difficulties of individuals with emphases on general principles and types of diagnosis appropriate to classroom and clinic. Examination and administration of diagnostic instruments as well as methods and materials used in remediation at the elementary and secondary level will be discussed and demonstrated. Prerequisite: ED 600 (applied to Reading majors only.)

ED 602 READING PRACTICUM: DIAGNOSTIC CASE STUDIES (Clinical Experience I) 3 s.h.

Students will administer and interpret a battery of diagnostic instruments, both formal and informal, to a small group of children. Emphasis will be placed on interview and observation techniques as well as diagnostic teaching. A needs assessment for each child will be completed. All work will be done under the supervision of the Reading Specialist Program faculty. Prerequisites: ED 600, ED 601, and ED 510.

ED 603 READING PRACTICUM: REMEDIAL CASE STUDIES (Clinical Experience II) 3 s.h.

Students will complete an in-depth needs assessment as well as design and implement a remedial program for a small group of children. Emphasis will be placed on the application of specialized remedial techniques. All work will be done under the supervision of Reading Specialist Program faculty. Prerequisites: ED 600, ED 601, ED 510, and ED 602.

ED 604 REMEDIATION OF SEVERE READING DISABILITY CASES 3 s.h.

Analysis and treatment of severely disabled readers under the supervision of specially prepared University personnel. Prerequisite: Permission of Coordinator.

ED 605 ORGANIZATION AND ADMINISTRATION OF READING PROGRAMS 3 s.h.

Emphasis on patterns of organization, approaches to instruction and use of appropriate materials which can be adopted to operation of a total school reading program in meeting individual, group and special needs of students.

ED 607 INSTRUCTION MATERIALS IN READING FOR CHILDREN AND YOUTH 3 s.h.

Designed to guide teachers, librarians, principals, reading specialists, and other curriculum workers in viable choices of appropriate materials for reading instruction.

ED 620 READING INSTRUCTION FOR THE CULTURALLY DISADVANTAGED 3 s.h.

Emphasizes the sociological, psychological, linguistic, and educational variables that affect the disadvantaged reader.

ED 670 PRACTICUM AND SEMINAR FOR READING SUPERVISORS 3 s.h.

A supervised field experience relevant to the duties of the reading supervisor in elementary and secondary schools, provides students the opportunity to translate theory into practice. Prerequisite: Permission of Coordinator.

ED 697 SEMINAR IN SPECIAL PROBLEMS IN READING 3 s.h.

Topics such as reading disability, preschool reading instruction and adult literacy programs will be covered.

ED 698 RESEARCH SEMINAR IN READING

3 s.h.

Designed to insure that students be able to read and understand reading research and statistical applications related to the field of reading. Students will interpret "t" test, AOV, repeated measures and correlations. Emphasis on application and understanding of statistical information and not solving mathematical formulas.

ED 699 INDEPENDENT STUDY IN READING EDUCATION

1-3 s.h.

The student with cooperation of the reading faculty member with whom he/she expects to work and his/her reading faculty adviser, engages in a study individually or with a small group on some problem or field not clearly defined in existing courses. Prerequisite: Permission of Coordinator.

SAFETY SCIENCES

The Department of Safety Sciences offers a program of studies leading to a Master of Science degree in Safety Science. A thesis or non-thesis curriculum is available.

Students have the opportunity to choose from a wide selection of course offerings or select a specialized area. In addition, students may choose elective courses, with approval of advisor, in fields directly related to Safety Sciences. The program is designed for individuals with relevant experience in Safety Sciences and those with appropriate undergraduate preparation who are interested in pursuing careers in the profession.

Department Admission Requirements

In addition to meeting the requirements for admission to the Graduate School, a student intending to work toward a Master of Science in Safety Sciences will be required to have the following prerequisite professional preparation:

Entry level competency in the four (4) subdisciplines; Safety Management, Occupational Safety, Occupational Health, and Fire Protection through relevant education, documented work experience, certifications or other means acceptable to the Safety Sciences Graduate Committee.

Relevant education would include the student's undergraduate preparation which, in general, shall include a minimum of six (6) semester hour credits in each of the following:

Safety	Chemistry
Occupational Health	Physics
Management Studies	Mathematics

In addition, three (3) semester hour credits shall be required in fire protection.

Where the Safety Sciences Graduate Committee determines that a deficiency in work experience or relevant education exists, a student will be required to complete additional studies to eliminate the deficiency.

MASTER OF SCIENCE IN SAFETY SCIENCES

All students are required to take a total of 36 hours of which 18 hours are core courses. The core courses are SA 601, SA 602, SA 603, SA 604, SA 605, and SA 606. The student must choose the remaining 18 hours in a specialized or generalized option. Students may choose between a thesis or non-thesis curriculum.

Degree Requirements (Thesis)—For the additional 18 required hours 3-6 of these may consist of a thesis. Students in a specialized option must complete a minimum of six-nine hours (not including thesis) in courses offered by the Safety Sciences Department, plus 6 hours of electives approved by the student's advisor. Students pursuing the generalized option must complete a minimum of 12 hours of Safety Science graduate coursework (one three-hour course in each subdiscipline). The remaining hours consist of electives which must be approved by the student's advisor.

Degree Requirements (Non-thesis)—Of the additional 18 required hours, students enrolled in the specialized option must complete six hours of Safety Sciences courses in one chosen subdiscipline. In addition, twelve hours of approved electives must be completed. Students pursuing the generalized option must complete twelve hours of Safety Sciences courses (one three-hour course in each subdiscipline) and six hours of approved electives.

COURSE DESCRIPTION

SA 541 ACCIDENT INVESTIGATION 3 s.h.

Focuses on the various aspects of accident investigation such as recent theories associated with accident causes, investigative techniques, data acquisition, structure of investigative reports, management responsibilities and remedial actions. Particular emphasis is placed on determining sequence of events to develop management actions which will prevent recurrence of accidents. Prerequisites: Junior Standing.

SA 561 AIR POLLUTION 3 s.h.

Focuses on the various major aspects of the air pollution problem. These include sources of pollution, evaluation and engineering control of pollutants, government regulations, atmospheric chemistry and dispersion, and human and non-human effects. Particular emphasis is placed on information that is practical for the Safety Sciences and Industrial Health professionals. Prerequisites: CH 101 and 102 or equivalent and SA 301 or equivalent courses, and junior standing; or permission of the instructor.

SA 562 RADIOLOGICAL HEALTH 3 s.h.

This course involves the study of problems associated with ionizing radiation in the human environment. Emphasis is given to biological effects, radiation measurement, dose computational techniques, exposure control, and local and federal regulations. The study and use of various radiological instruments is included. Prerequisites: SA 301, PY 111, PY 112, and junior standing; or permission of the instructor.

SA 581 SPECIAL TOPICS 3 s.h.

A dual level elective offering in which the specific topic may vary from one term to the next. Prerequisites: Permission of the instructor.

SA 601 CONCEPTS OF RISK ASSESSMENT 3 s.h.

The concept of risk is implicit in every justification for hazard control measures and is an important criterion in the evaluation of hazards. This course provides definitions and methods for risk measurement in various contexts. Rationale are developed for establishing acceptable risk levels, and for safety management decision making.

SA 602 QUANTITATIVE METHODS IN SAFETY MANAGEMENT 3 s.h.

The objective of this course is to prepare individuals for the conduct of research in safety and its numerous subspecialties. Research paradigms, experimental design, data sources and collection, and statistical methods are covered in detail. The emphasis throughout is on quantitative approaches likely to produce valid new knowledge in the discipline of safety management. Prerequisites: SA 345 and MA 217 or permission of the instructor.

SA 603 HUMAN RELATIONS IN SAFETY MANAGEMENT 3 s.h.

Integrates various behavioral science theories into the practice of safety management. Areas covered are motivation, communications, managerial interactions, and controlling worker behavior as they relate to accident causation. Prerequisites: PC 101 and MG 642 or permission of the instructor.

SA 604 INDUSTRIAL TOXICOLOGY 3 s.h.

Principles and techniques for evaluating toxicological properties of chemical substances are studied with particular emphasis on extrapolation of information to determine permissible exposure limits in the workplace. The student is acquainted with requirements for operating an animal toxicology facility as well as means of obtaining relevant human experience data. Prerequisites: CH 101, CH 102, MA 217 or permission of the instructor.

SA 605 ADVANCED PRINCIPLES OF SAFETY ENGINEERING 3 s.h.

This course prepares the student with a fundamental understanding of those hazards which can contribute to accidental injury and damage. These hazards are studied in an engineering context and their physical and chemical characteristics are studied in depth in order to make the appropriate hazard control measures better understood. Prerequisites: SA 111, SA 211, PY 112; or permission of the instructor.

SA 606 HAZARDOUS MATERIALS MANAGEMENT 3 s.h.

This course offers the student a logical approach to the problem of hazardous materials management. Emphasis is placed on legislative controls that industry must comply with in the shipping, storing, use, and disposal of hazardous materials. Program development in hazardous materials management is covered in detail. Prerequisites: SA 311, CH 101, CH 102 or permission of the instructor.

SA 620 SAFETY DATA MANAGEMENT 3 s.h.

Covered are: design of loss incident source documents and code dictionaries; procedures to collect accident cost and cause data; accident cause analysis; and data for management accountability and decision making. Prerequisites: SA 412 and FS 241 or permission of the instructor.

SA 623 ADVANCED SAFETY ADMINISTRATION 3 s.h.

Analyzes the management structure for its procedures, organizations, policies, departmental competencies as they relate to safety. Ways to audit and improve management's safety effectiveness are covered. Prerequisites: SA 412, FS 360, or permission of the instructor.

SA 642 ADVANCED MINE SAFETY ENGINEERING 3 s.h.

Provides an understanding of advanced subjects concerned with mine health and safety. Details the cost-benefit analysis of each phase of the mineral industry and the design features of various mining operations of the United States. Prerequisites: SA 232, SA 401, or permission of the instructor.

SA 643 CONSTRUCTION SAFETY 3 s.h.

This course provides an in-depth treatment of hazard recognition, evaluation, and control principles used in the construction industry. Extensive coverage of federal standards is given together with the means by which a construction safety program can be developed and administered. Prerequisites: SA 211, or permission of the instructor.

SA 663 INDUSTRIAL HYGIENE LABORATORY METHODS 3 s.h.

Laboratory methods germane to industrial hygiene sampling and analytical methods are studied in depth. The student is introduced to a variety of laboratory procedures as well as biological monitoring. Sampling and analytical statistics are also emphasized. Prerequisites: SA 302, SA 303, or permission of the instructor.

SA 681 SPECIAL TOPICS 3 s.h.

A graduate-only elective offering in which the specific topic may vary from one term to the next. Prerequisites: Permission of the instructor.

SA 682 CHEMICAL PROCESS SAFETY 3 s.h.

This course is designed to cover all important aspects of loss prevention as it is practiced in the chemical process industries. Its objective is to prepare the safety professional so that he/she may be able to work more effectively with chemists and chemical engineers in joint hazard identification, evaluation, and control projects. Prerequisites: SA 301, SA 311, and SA 345 or permission of the instructor.

SA 683 DISASTER PREPAREDNESS 3 s.h.

Principles and techniques for preparing for various types of disasters. The students are acquainted with requirements necessary to develop workable plans for natural and industrial type of disasters. Preventative loss measures are discussed directed toward preservation of organization resources. Prerequisites: SA 311 or equivalent or permission of the instructor.

SA 684 FIRE SAFETY IN BUILDING DESIGN 3 s.h.

The student is provided with the necessary concepts and principles for the safe design of buildings from a fire hazard standpoint. Emphasis is given to the adequate understanding of fire properties as they influence selection of materials for construction, fire prevention facilities, and fire suppression considerations. Prerequisites: SA 311 or equivalent or permission of the instructor.

SA 699 INDEPENDENT STUDY 3 s.h.

Study in depth of a topic not available through other course work. Student works with supervising faculty member on carefully planned, student initiated project. Prior approval is necessary. Prerequisites: Permission of the instructor.

SA 850 THESIS 3 s.h.

The thesis will require a committee review with one faculty member serving as the students' advisor. The committee will also include two additional faculty members and a representative of the Dean of the College of Health Sciences. Prerequisites: Permission of the instructor.

SCIENCE FOR THE ELEMENTARY SCHOOL TEACHER

The program leading to a Master of Education Degree in Elementary Science is designed to give elementary teachers depth and competency in the content areas of the physical, biological and earth sciences. The assemblage of courses cited below should prepare the student for work as an Elementary Science resource person within his/her school or school district. Except for GR 615, GS 602, and GS 561 all of these courses are not open to majors in Biology, Chemistry, or Physics.

Following admission to The Graduate School, each candidate will be assigned an adviser who will assist the student in planning an approved program of courses.

MASTER OF EDUCATION IN ELEMENTARY SCIENCE

This program is not intended for certification in science at the secondary level. It is designed to provide the elementary teacher with an opportunity to increase his/her ability to teach science at the elementary level. Students working for this degree with a major in Elementary Science will complete 30 s.h. of work in accordance with the following divisions if a thesis is completed. If no thesis is selected, 33 s.h. must be completed.

I. Professional Development Area (nine s.h.)

- A. Humanistic Studies (three s.h.)—One of the following: FE 611, FE 612, FE 613, or FE 514.
- B. Behavioral Studies (three s.h.)—One of the following: EP 604, EP 573, EP 576, EP 578, EP 573, CE 629, CE 639, EX 631, EX 638, or EX 664.
- C. Research (three s.h.)
GR 615 Elements of Research

II. Specialization Core—(six s.h.)

III. Subject Area and/or thesis—(15-18 s.h.)

Subject Matter Concentration Area—15-18 s.h. of work in subject matter content are to be selected from the following courses except that a more advanced course may be required by the adviser if the background of the student warrants: ES 610-611, ES 630, ES 640, ES 650, ES 660, ES 664, ES 666, ES 674, ES 680, ES 688, ES 692, GS 602, GS 561, EM 651, MI 500.

For description of FE courses, see section on FOUNDATIONS OF EDUCATION, for EP courses, EDUCATIONAL PSYCHOLOGY; for CE courses, COUNSELOR EDUCATION; for EX courses, SPECIAL EDUCATION; for GS courses, GEOSCIENCE; for BI and MI courses, BIOLOGY; for EM courses, MATHEMATICS FOR ELEMENTARY SCHOOL TEACHER.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

COURSE DESCRIPTIONS

ES 610 EDUCATION IN THE OUT-OF-DOORS 3 s.h.

Specifically designed to teach the elementary teacher to coordinate all of the elementary subjects into lessons taught in the out-of-doors that cannot ordinarily be taught in the classroom. (Summers only.)

ES 611 EDUCATION IN THE OUT-OF-DOORS 3 s.h.

Specifically designed to teach the elementary teacher to coordinate all of the elementary subjects into lessons taught in the out-of-doors that cannot ordinarily be taught in the classroom. (Summers only).

ES 630 QUANTITATIVE TOOLS FOR EL. SCIENCE 3 s.h.

Proficiency in quantitative aspects of science. Emphasis on practical problem solving related to typical lab data. Instruments, instrument calibration, graphing, and graph interpretation (interpolation and extrapolation). Area under the curve idea and meaning of slope on a graph will be explored extensively. Concentrated instruction in use of computers, use of logarithms and significant figures as tools to achieve above objectives. (Wolfe)

ES 640 CHEMISTRY IN ELEMENTARY SCIENCE EDUCATION 3 s.h.

Principles of chemistry through lab and/or field-centered experiences relevant to teaching chemistry in elementary school. Recommended for all elementary education majors. (Zambotti)

ES 650 PHYSICS IN ELEMENTARY SCIENCE EDUCATION 3 s.h.

Development of basic concepts in physics on a quantitatively plausible basis appropriate for elementary science. Lab work is designed to develop an understanding of force, work, and energy, and conservation of energy in mechanical thermal and electrical systems. Operational definitions and formulation and use of physical models. (Riban)

ES 660 BOTANY IN ELEMENTARY SCIENCE EDUCATION 3 s.h.

Introduction to anatomy and life processes of plant cells, tissues, and organs. Consideration to selected algae, bacteria, fungi, mosses, ferns and their allies and seed plants. Recognition of groups of local plants, their economic importance and health implications are emphasized. Lab studies will include practical uses of plants. (Schrock)

ES 664 ZOOLOGY IN ELEMENTARY SCIENCE EDUCATION 3 s.h.

A lab and field study which surveys principles and theory of zoological taxonomy and study of representative invertebrate and vertebrate taxa. Emphasis on freshwater and terrestrial forms which may be observed or collected in Western Pennsylvania. Homologous structures are compared and their functions are studied. Principles of embryology, genetics and animal behavior are introduced. (Merritt)

ES 666 CONSERVATION IN ELEMENTARY SCIENCE EDUCATION 3 s.h.

A new concept in conservation-corrective and preventive conservation for man's survival. Problems of pollution and population are central theme. Field work is required. (Ferrence)

ES 674 METEOROLOGY IN ELEMENTARY SCIENCE EDUCATION 3 s.h.

A descriptive analysis of fundamentals of weather, including: composition and structure of atmosphere, radiation, heat budget, cloud and rain physics, circulation patterns, storm structures, air pollution, and biometeorology. Familiarization with weather instruments, maps and records, as well as activities applicable to elementary science. (Prince)

ES 680 ASTRONOMY IN ELEMENTARY SCIENCE EDUCATION 3 s.h.

A descriptive and qualitative study of stellar and solar system astronomy including telescopes and space travel at a level adaptable to the elementary school classroom and techniques for their presentation. Three hours lecture and/or lab. (Sutton)

ES 688 FIELD NATURAL HISTORY OF WESTERN PA. 3 s.h.

Bus and automobile travel throughout Western Pennsylvania. Places of interest in ecology, geology, conservation, and nature study will be visited. Offered in pre- or post-session only. Travel may require the student to be away from campus for several days at a time. A travel assessment based upon needs will be made. (Ferrence)

ES 692 ELEMENTARY SCIENCE CURRICULUM 3 s.h.

Various approaches to teaching of elementary science and bases for these approaches. New curricula being used in elementary schools will be examined and critiqued. (Moore)

SOCIAL SCIENCE

MASTER OF EDUCATION IN SOCIAL SCIENCE

The Master of Education degree in Social Science is designed to give secondary teachers greater depth and competency in the subject matter, methodology and research techniques of the social sciences.

Each student admitted to The Graduate School will be assigned an adviser in the Social Science Division. All courses must be approved by the adviser.

Students working for this degree have two options for completing the program: (1) 30 s.h. of work, with thesis, in accordance with the MEd program requirements described earlier in this catalog; (2) 36 s.h. of work with no thesis. Courses in subject matter concentration must be elected in three of five social sciences (Economics, Geography, History, Political Science, Sociology/Anthropology). See course listings in this catalog under each of those headings.

COURSE DESCRIPTIONS

SS 581 SPECIAL TOPICS: FOREIGN STUDY 1-6 s.h.

Directed foreign study that involves travel and observation outside the United States. Areas visited and itineraries vary from year to year. Background reading, lectures and briefings, diary or evaluative paper is required. In past years, Argentina, India, the Soviet Union and countries of Western Europe have been tour destinations. For details on projected tours, direct inquiries to Director, Center for International Studies.

SS 610 NEW APPROACHES IN SOCIAL SCIENCE INSTRUCTION 3 s.h.

Develop innovative curriculum materials by applying concepts from the latest research in the behavioral and social sciences. Plan strategies for use of such materials in the classroom. Explore the methods available for analyzing the teaching process.

**SS 614 RESEARCH METHODOLOGIES IN THE
SOCIAL SCIENCES** 3 s.h.

Techniques of locating and using source materials, evaluation of evidence, organization of tested data, and exposition of tested data according to approved forms are discussed. Methodologies of value to students in various disciplines of social sciences are explored.

SS 680 SOCIAL SCIENCE SEMINAR

3 s.h.

Research in methodology of social science in the secondary schools. Restricted to MEd candidates. Prerequisite: GR 615.

SS 699 INDEPENDENT STUDY

1-3 s.h.

Independent research and study under faculty direction. Interested students should apply to director of graduate studies.

SOCIOLOGY

Sociology is the study of society and human social relationships. Advanced training in sociology should enable the student to think critically and reflectively about the social world and to be able to use the knowledge acquired in a variety of ways: Sociology is relevant to a number of careers. Many students plan to affiliate themselves with professional social service, governmental, or research organizations, while other students pursue academic sociological careers. The MA program in Sociology is designed to serve these various needs and interests of students.

MASTER OF ARTS IN SOCIOLOGY

In addition to graduate school admission requirements, the student should have completed at least 12 hours of undergraduate sociology courses with an average grade of B or better. In individual cases the department may allow a promising student to enter the program with deficiencies. Such deficiencies must be made up by taking specific courses at the discretion of the department in addition to the required total number of course hours.

All MA students are required to complete the two basic core requirements: SO 664 Research Seminar in Sociology, and SO 667 Contemporary Sociological Theory. Beyond the completion of these two courses, the MA in Sociology allows the student two options:

Thesis Option: In addition to the two core courses, students will complete an additional 18 s.h. of coursework (12 s.h. of which must be in sociology) and a six s.h. thesis (SO 850).

Non-Thesis Option: In addition to the two core courses, students will complete an additional 30 s.h. of coursework (21 s.h. of which must be in sociology).

Students planning further academic work in sociology may find the thesis option most helpful, while those going on to community-related work might find the non-thesis option most beneficial. Specific programs of study are planned by student and assigned faculty adviser when the student enters the program. Students may later alter their program of studies in consultation with their advisers. Such flexibility in structuring the curriculum, we believe, will best serve students.

No more than one-third of a student's work toward the MA may be in dual-level (500) courses. Therefore, those selecting the thesis option are limited to nine s.h. of dual-level coursework, while those selecting the non-thesis option will be permitted no more than 12 s.h. of dual-level coursework. Furthermore, students who enrolled for dual-level courses while undergraduates at IUP may not repeat the same courses for credit as graduate students.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

COURSE DESCRIPTIONS

- SO 522 CULTURE AND PERSONALITY** 3 s.h.
Study of personality traits unique to prescribed cultural or institutional settings. Subject matter includes socialization, emotional expression, kinesics, deviant roles, cultural aspects of mental disturbance, and value orientation. Some attention given to research methods employed in the discipline.
- SO 534 POPULATION PROBLEMS** 3 s.h.
Major forces of population change examined. Problems of excessive population growth rates outside of U.S. and declining growth rates in U.S. analyzed. Threats to ecological stability discussed.
- SO 542 SOCIAL AND CULTURAL ASPECTS OF HEALTH AND MEDICINE** 3 s.h.
Review of fields of medical sociology and anthropology: Focuses on such topics as social background of illness, folk medicine, cultural differences in perceptions of health, and social organization of health facilities.
- SO 543 DEVELOPMENT OF SOCIAL THEORY** 3 s.h.
Examination of historical development of social theory with special attention to the classical theorists and theoretical ideas which have contributed most significantly to modern sociology.
- SO 557 SOCIOLOGY OF AGING** 3 s.h.
Introduction to various problems faced in the process of growing older. Attitudes of society toward elderly and social and cultural impact of an aging U.S. population examined.
- SO 559 THE DEVELOPMENT OF SOCIAL SERVICES** 3 s.h.
Examination of genesis and implementation of health, welfare, and employment policy with particular reference to who benefits from such policy and who does not.
- SO 581 SPECIAL TOPICS SEMINAR IN SOCIOLOGY** 3-6 s.h.
See 681 for course description.
- SO 654 SOCIAL INEQUALITY** 3 s.h.
Examines central theoretical perspectives on inequality. Considers such topics as nature of social classes and inequality in the U.S. characteristics of working class, poor, and super-rich, and sexual inequality.
- SO 656 SOCIAL CHANGE** 3 s.h.
Explores nature and consequences of social change, types of changes individuals might want in U.S. and how these might be implemented. Also discusses lessons to be learned from various social change efforts.
- SO 660 SOCIOLOGY OF POWER** 3 s.h.
Examines social power of groups and classes with particular emphasis on the sources of power and the ways in which power is exerted.
- SO 662 THE SOCIOLOGY OF DEVIANCE** 3 s.h.
Relationship between individual deviance and social and cultural factors examined. How different groups set limits for acceptable behavior analyzed in comparative and historical context.
- SO 663 ISSUES IN RACIAL INEQUALITY** 3 s.h.
Focuses on current situation of minorities in U.S. Efforts to improve conditions for minorities in employment, housing, education, and police protection receive special attention.

SO 664 RESEARCH SEMINAR IN SOCIOLOGY 3 s.h.

Examination of diverse research designs in the social sciences. Focuses on understanding and critique of designs and on integration of theory and research. Special attention given to development of thesis proposal. Required for MA in Sociology.

SO 667 CONTEMPORARY SOCIOLOGICAL THEORY 3 s.h.

Examination of major systems of sociological theory and major theoretical controversies vying for attention in contemporary sociology. Emphasis given to theories in macrosociology, especially functionalism, neo-Marxian conflict theory, and societal evolutionism. Required for MA in Sociology.

SO 674 COMPARATIVE URBAN STUDIES 3 s.h.

Reviews sociological analysis of urbanism and urbanization. Growth and problems of cities investigated and comparative approach stressed throughout. Various research methods and theoretical orientations considered.

SO 676 COMPARATIVE MACROSOCIOLOGY 3 s.h.

Detailed comparative analysis of major institutional features of entire range of human societies, from band and tribal, through agrarian, to industrial societies. Course organized in an historical or evolutionary framework. Seeks basic theoretical understanding of forces responsible for organization and transformation of human societies.

SO 681-581 SPECIAL TOPICS SEMINAR IN SOCIOLOGY 3-6 s.h.

Seminar focuses on specialized areas in the discipline not covered by regular courses. Students will do extensive reading in the area. Course may be repeated under different subtitles.

SO 690 READINGS IN SOCIOLOGY 3 s.h.

Students report and develop extensive bibliographies on assigned readings for depth understanding of a specific sociological concept, process, or problem.

SO 699 INDEPENDENT STUDY IN SOCIOLOGY 1-3 s.h.

Students wishing to specialize beyond course-work are encouraged to work on a one-to-one basis with faculty members in independent study. Students may elect up to a total of six s.h. of independent study.

SPECIAL EDUCATION AND CLINICAL SERVICES

This Department offers a graduate program leading to the Master of Education Degree in Education of Exceptional Children or in Speech Pathology. The Department also offers the Master of Science degree in Exceptionality or in Speech Pathology. A graduate level of competency in these major areas is in accord with national standards now emphasized by professional organizations such as the Council for Exceptional Children and the American Speech and Hearing Association.

The MEd degree requires a course in Foundations of Education and practicum experiences in appropriate settings. The Master of Science degree is based upon an individual program which integrates academic as well as practicum experience with selected community agencies. For details on the supervisory certificate, applicants should contact the department chairperson.

MASTER OF EDUCATION IN EDUCATION OF EXCEPTIONAL CHILDREN

This graduate program offers majors Master of Education options in one of the following areas of concentration: (1) Mentally Retarded, (2) Emotionally Disturbed, (3) Learning Disabled, (4) Gifted/Talented. As a prerequisite for completion of the MEd degree, the first three major options require Pennsylvania comprehensive teaching certification in Education of Mentally and/or Physically Handicapped. Candidates with teaching certification in other fields will be required to complete additional semester hours toward such certification, depending on individual background. The fourth concentration area requires Pennsylvania teaching certification in an elementary or secondary field.

All four concentration areas require nine s.h. in Professional Development selected from the approved list, including three s.h. in Foundations of Education, three s.h. selected from the course list in Behavioral Studies, and three s.h. in Research (GR 615). All four concentration areas also require six s.h. in Specialization Core, including EX 640 for the first three areas, as well as the specialization courses in each area: EX 623 for the Mentally Retarded, EX 665 for the Emotionally Disturbed, EX 666 for the Learning Disabled, and EX 664 for the Gifted/Talented.

All four concentration areas require a minimum of 21 s.h. in Subject Area course work unless the thesis option is selected. Advisement is required for course selection, and workshops are not to be considered applicable for degree requirements.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

MASTER OF SCIENCE IN EXCEPTIONALITY

Professional training is provided for those who wish to gain competencies for working with mentally and/or physically handicapped adults and their families in the community or in various agencies and organizations. Adviser recommendation should be obtained prior to enrollment. Course selection and degree candidacy is based upon individual background and employment goals. Candidates for the Master of Science degree will select a minimum of 21 s.h. in Subject Matter Concentration including six s.h. in EX 685 Practicum, EX 522, EX 630, EX 631, and PC 640 or EX 645. They will also complete a minimum of three s.h. in GR 615 Elements of Research as well as three to six hours of Interrelated Study selected according to student needs.

For description of PC course, see section on PSYCHOLOGY.

For description of GR courses, see entry under "GENERAL SERVICE COURSES."

COURSE DESCRIPTIONS

EX 500 EDUCATION OF EXCEPTIONAL CHILDREN IN REGULAR CLASSES

3 s.h.

Intended for graduate students who are teaching regular classes, and other school personnel who do not have a background of formal course work in the general area of exceptionality. Included will be specific vocabulary and etiology of handicapping conditions as they relate to regular class teachers in understanding the nature of problems. Concepts of mainstreaming and resource room teaching will be included.

EX 524 LEARNING DISABILITIES AND THE LANGUAGE PROCESSES

3 s.h.

Designed for students pursuing the concentration in learning disabilities. Skills are taught to help the student evaluate learning disabled children, with a major emphasis on language processes.

EX 530 PHYSICAL DISABILITIES AND PSYCHOLOGICAL HANDICAPS

3 s.h.

Principles and practices in rehabilitation, with attention to contributions of teachers, counselors, nurses, social workers, psychologists, speech therapists, and other professional workers.

EX 557 SEVERE AND PROFOUND RETARDED AND MULTIDISABILITIES

3 s.h.

An analysis of curriculum and program content for the trainable mentally retarded ranging from preschool age to adult ages. Directed toward students and teachers who plan to teach the retarded in public schools, institutional facilities, and/or sheltered workshops.

EX 564 PRESCHOOL EDUCATION OF THE HANDICAPPED

3 s.h.

Development of intervention strategies, assessment of prescriptive planning for, and curricular programs for the preschool aged handicapped child from infancy to five years of age. Prepares needed teachers for preschool programs for the handicapped. Satisfies state and federal priorities where the emphasis is being placed for the education of preschool handicapped.

EX 580 SELECTED PROBLEMS AND RESEARCH

1-3 s.h.

Students will review critically recent developments in the field. Opportunity is afforded for independent readings and limited research reports. A student may identify a topic for subsequent development as his/her thesis or research project. Prerequisites: EX 631, EX 639, EX 640.

EX 599 INDEPENDENT STUDY IN SPECIAL EDUCATION

1-3 s.h.

Individual students develop research studies in consultation with a faculty member. Departmental consent required.

EX 623 CURRICULUM AND METHODS

3 s.h.

Designed to provide an in-depth understanding of current curriculum levels for all retarded students. Curriculum guides are evaluated and analyzed in relation to present and future programs. Some consideration to subject matter at elementary and secondary levels, relationship between academic subjects and vocational skills; emphasis on clinical and diagnostic approach in curriculum design.

EX 625 VOCATIONAL AND CAREER OPPORTUNITIES FOR THE HANDICAPPED

3 s.h.

Designed to develop competencies in the area of pre-vocational and vocational education of the handicapped. A review of career and occupational alternatives for the handicapped, as well as techniques and skills required for obtaining and maintaining employment.

EX 630 ORGANIZATION AND ADMINISTRATION OF PROGRAMS FOR EXCEPTIONAL CHILDREN 3 s.h.

Principles, practices, and problems of administration and supervision as they relate to developing and maintaining special education programs. Criteria are analyzed for use in evaluation of local programs. Functions of administrators and supervisors in school systems are compared according to rural, urban, or statewide responsibilities. Prerequisites: EX 623, 640. (Required for administrators and supervisors.)

EX 631 PSYCHOLOGY EXCEPTIONAL CHILDREN AND YOUTH 3 s.h.

Designed as a basic course in the psychosocial and psychoeducational adjustment of exceptional individuals. Consideration given to general needs and assessment of all exceptional persons as well as to specific needs of those with unique mental and/or physical conditions.

EX 632 GUIDANCE AND ADJUSTMENT FOR THE EXCEPTIONAL 3 s.h.

Home, school, and community influences are analyzed in family adjustment to the presence of an exceptional child. Family reactions are considered in behavioral differences among children with various degrees of exceptionalities. Emphasis to guidance skills and knowledge needed by teachers and other professional workers in the field of exceptionality.

EX 638 PSYCHOLOGY OF THE GIFTED CHILD 3 s.h.

Characteristics of the bright, fast-learning child along with implications for education. Emphasis to measurement techniques, motivational factors, and personality dynamics.

EX 639 PSYCHOLOGY OF THE MENTALLY RETARDED 3 s.h.

Characteristics of the mentally retarded are analyzed with applications for educational, vocational and personal adjustment. The various levels of mental retardation are considered in relation to etiology, learning and behavior, development, measurement, social factors, and interpersonal and family relations. Consideration given to changing outlook and recent trends in the field.

EX 640 DIAGNOSTIC TECHNIQUES IN SPECIAL EDUCATION 3 s.h.

Diagnostic procedures and appropriate test materials are selected for use in assessment of pupils with mental, physical, emotional, and learning disabilities. Observations and demonstrations, reporting and interpreting results of diagnostic procedures are integrated with remedial or developmental recommendations in individuals case studies. Prerequisites: EX 631, EX 639.

EX 641 INTERPRETATION OF RESULTS OF PSYCHOLOGICAL TESTS 3 s.h.

Results of psychometric tests are analyzed and interpreted. Various standardized psychological instruments and test batteries are considered in the light of their purpose and usage. Both individual and group test results are examined.

EX 645 COMMUNITY AND AGENCY PLANNING FOR THE EXCEPTIONAL 3 s.h.

Selected professional, governmental and community organizations are studied for their contributions to comprehensive planning toward educational, personal-social, and occupational adjustments. Social, educational, economic, and cultural aspects are analyzed.

EX 664 CURRICULUM PLANNING FOR THE GIFTED/TALENTED 3 s.h.

Utilization of existing hierarchal presentations to aid with curricular decision-making by teachers, supervisors, and administrators for the gifted/talented, nursery school through twelfth grade. Emphasis on four major areas: social studies, mathematics and science, language arts, and creative arts. Considerations for integrating other disciplines and for going beyond the scope of the course will be presented. Prerequisite: EX 638 Psychology of the Gifted.

**EX 665 EDUCATION OF CHILDREN WITH SOCIAL AND
EMOTIONAL MALADJUSTMENTS**

3 s.h.

Examines reactions of children in the schools who deviate in their emotional or social behavior. Consideration is given to children who habitually exhibit overcontrolled, undercontrolled, or immature reactions. Identification, characteristics, educational provisions, and preventive measures are emphasized.

**EX 666 EDUCATION OF CHILDREN WITH
LEARNING DISABILITIES**

3 s.h.

Emphasizes curriculum and remedial instruction for children with special learning disabilities who exhibit a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or in arithmetic.

EX 685 PRACTICUM AND INTERNSHIP

3-9 s.h.

Advanced students are offered guided practicum experiences in selected schools, residential institutions, clinics, or agencies. Internship or supervised student teaching is planned individually. Students analyze, evaluate, and report on their experiences.

SPEECH - LANGUAGE PATHOLOGY

The Speech - Language Pathology program culminates in either a Master of Science or a Master of Education degree. A minimum of 36 s.h. is required for either degree. The program provides for the completion of the academic and practicum requirements for the Certificate of Clinical Competence from the American Speech-Language-Hearing Association. Those students who have not completed an undergraduate major comparable to that offered by IUP in the discipline may be provisionally admitted and, upon completion of the deficiencies, may apply for full graduate status. Workshops are not to be considered applicable for degree requirements. The thesis option is available with either degree and requires approval of the adviser.

MASTER OF EDUCATION IN SPEECH-LANGUAGE PATHOLOGY

Candidates for the Master of Education degree will choose nine s.h. in Professional Development, a Specialization Core of six s.h. (SH 624 and SH 645), and a minimum of 21 hours of Subject Matter Concentration including SH 610, SH 650, SH 661, SH 662, SH 663, and SH 681. The coursework in the Professional Development sequence must receive approval of the adviser.

MASTER OF SCIENCE IN SPEECH-LANGUAGE PATHOLOGY

Candidates for the Master of Science degree will select a minimum of 24 s.h. in the Subject Matter Concentration including SH 610, SH 630, SH 640, SH 650, SH 661, SH 662, SH 663, and SH 681. They will also complete three to six s.h. of research and register for one elective (3 s.h.) approved by the adviser.

COURSE DESCRIPTIONS

SH 512 CLEFT PALATE 3 s.h.

Problems associated with phenomenon of cleft lip and palate with special emphasis in areas of speech, hearing, and language. Included in course will be human embryology; physical remediation; the effects of clefts on structure and function of speech and hearing mechanism; role of speech correctionist on the cleft palate team.

SH 604 DIAGNOSTIC METHODS 3 s.h.

Evaluation of tests and techniques of diagnosis of speech and language disorders; interpretation of results and planning appropriate subsequent case management. Interviewing techniques appropriate to case history taking. Writing of diagnostic and case-history reports.

SH 610 ARTICULATION 3 s.h.

Linguistic approach to articulatory process and analysis of misarticulation as symptoms of language dysfunction; variables related to articulatory mastery; programmed, traditional, and sensory-motor methods of modifying articulatory behavior.

SH 614 NEUROPATHOLOGIES OF SPEECH 3 s.h.

Investigation of symptoms and etiologies associated with deviant neural transmission and muscular contraction. Examination of diagnostic techniques employed in neuromuscular conditions resulting from palsies, progressive degenerative diseases, dysarthrias, tumors, and paralytic or paretic involvement. Emphasis on treatment approaches.

SH 616 STUTTERING 3 s.h.

Nature and causes of stuttering. Emphasis on diagnosis and management. Counseling and learning theory application as two main approaches to treatment. Consideration of the person as a stutterer. Review of pertinent and recent research topics.

SH 618 VOICE 3 s.h.

Scientific principles of voice production and modification with emphasis on physiology, pathologies, or malfunctioning which produce voice defects; relationship between disorders of voice and personality; diagnostic and therapeutic considerations for both organic and psychogenic disorders, including the laryngectomized.

**SH 624 PRINCIPLES OF SPEECH-LANGUAGE PATHOLOGY
IN THE SCHOOLS** 3 s.h.

Advanced study of legal and social factors affecting service delivery in the public schools. Models of service delivery for classroom and individual programs. Models of supervision for staff, paraprofessionals, and trainees.

SH 630 LANGUAGE DISORDERS OF CHILDREN 3 s.h.

Anatomical, physiological, psychological, neurological and environmental factors related to language delay or disordered language acquisition. An inventory of language skills and means of fostering their development or compensating for inadequacies; a holistic vs. specific approach to programs of remediation.

SH 631 SEMINAR IN LANGUAGE ACQUISITION 3 s.h.

Advanced study of the processes and sequences of normal language acquisition. Special emphasis placed upon a comprehensive review of recent theories and research related to cognitive-perceptual and social-pragmatic variables. Trends in language acquisition will be studied in relationship to other developmental sequences.

SH 632 APHASIA 3 s.h.

Consideration of language, speech and related problems resulting from neurological insult. Neurological functioning and dysfunctioning will be highlighted. Diagnosis and management of persons with aphasia, agnosias, or apraxias will be emphasized. Role of family in rehabilitation and family counseling.

SH 635 SEMINAR IN COMMUNICATION 1-3 s.h.

Intensive study of one or more areas of speech science, speech and language pathology, or audiology. Topics vary to meet the student's needs and interests. Course may be repeated for credit with a change in area considered. Prerequisite: Speech-Language Pathology major, admission to degree candidacy, and adviser approval.

SH 640 DIAGNOSTIC AUDIOLOGY 3 s.h.

Identification and description of types of hearing impairment by standard audiometric procedures including pure tone, speech, and site of lesion batteries. Testing of special populations as well as evaluation for fitting of amplification.

SH 645 PEDIATRIC AUDIOLOGY 3 s.h.

Study of audiological procedures used from infancy through adolescence. Special emphasis on evoked response audiometry, impedance audiometry/tympanometry, and behavioral procedures in addition to standard audiological procedures. Interpretation of findings on children and its effect upon medical referral, classroom placement, and prosthetic or educational modifications.

SH 650 ADVANCED SPEECH SCIENCE 3 s.h.

Physiologic, acoustic, and perceptual characteristics of speech with special emphasis on speech monitoring and controls. Major lab instrumentation and research techniques in current use are described and demonstrated. Status of present knowledge is summarized and discussed.

SH 661 ADVANCED CLINICAL PRACTICUM I 2-6 s.h.

Supervised practicum experience in the University Speech and Hearing Clinic with individuals exhibiting speech, language, and/or hearing dysfunction. Planning and administration of programs of therapy plus interviewing, diagnosing, counseling, and report writing.

SH 662 DIAGNOSTIC CLINIC 1 s.h.

Supervised practicum experience in performing in-depth diagnostic evaluations with individuals exhibiting any type of speech, hearing, or language dysfunction. Experience in taking case histories, conferring with parents, and report writing.

SH 663 HEARING TESTING CLINIC 1 s.h.

Supervised practicum experience in performing diagnostic audiological tests.

SH 681 ADVANCED CLINICAL PRACTICUM II 2-6 s.h.

Similar to SH 661; students assume more responsibility, and experience may be done at approved off-campus sites.

SH 850 THESIS 3 s.h.

THEATER

The Theater Department does not offer a graduate degree program.

TH 586 PRACTICUM IN PRODUCTION

1-6 s.h.

An opportunity with academic credit for students to make significant contributions to campus productions augmenting theater course work in the areas of assistant directing or directing, stage management, technical direction, sound design, lighting, costuming, scene design, properties and set decoration, scene building and painting and make-up design. May be repeated for a maximum of six credits. Prerequisite: by permission.

TH 588 SUMMER THEATER WORKSHOP

3-9 s.h.

A practicum offering experience in all major aspects of production by combining class work with participation in Theater-by-the-Grove, IUP's repertory theater.





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TELEPHONE NUMBERS

If you have a question concerning a specific graduate program at IUP, please contact the department chairperson. Telephone numbers are listed below for your convenience. The area code for IUP is 412.

Adult and Community Education	357-2470
Art and Art Education	357-2530
Biology	357-2352
Business	357-2520
Chemistry	357-2361
Communications Media	357-2492
Computer Science	357-2524
Consumer Services	357-2336
Counselor Education	357-2306
Criminology	357-2720
Economics	357-2640
Educational Psychology	357-2445
Elementary Education	357-2400
English	357-2264
Food and Nutrition	357-4440
Foreign Languages	357-2325
Foundations of Education	357-2225
Geography and Regional Planning	357-2250
Geoscience	357-2379
Health and Physical Education	357-2771
History	357-2284
Home Economics Education	357-2563
Industrial and Labor Relations	357-4470
Mathematics	357-2608
Music and Music Education	357-2390
Nursing	357-7647
Philosophy	357-2310
Physics	357-2370
Political Science	357-2290
Professional Growth	357-2222
Psychology	357-2426
Reading	357-2476
Safety Sciences	357-3017
Science for the Elementary School Teacher	357-2359
Sociology	357-2730
Special Education and Clinical Services	357-2450
Sport Sciences	357-2770

GRADUATE SCHOOL FORMS

Please send me immediately the following

Graduate School Forms:

_____ General Application

_____ Application for Degree Candidacy

_____ Research Proposal

_____ Application for Graduation

_____ Other: Please Specify— _____

MAIL TO:

Name: _____

Address: _____

City/State/Zip: _____

Telephone: _____

The Graduate School
IUP
Indiana, Pennsylvania 15705
Telephone: (412) 357-2222

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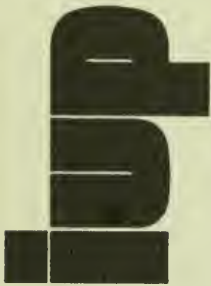
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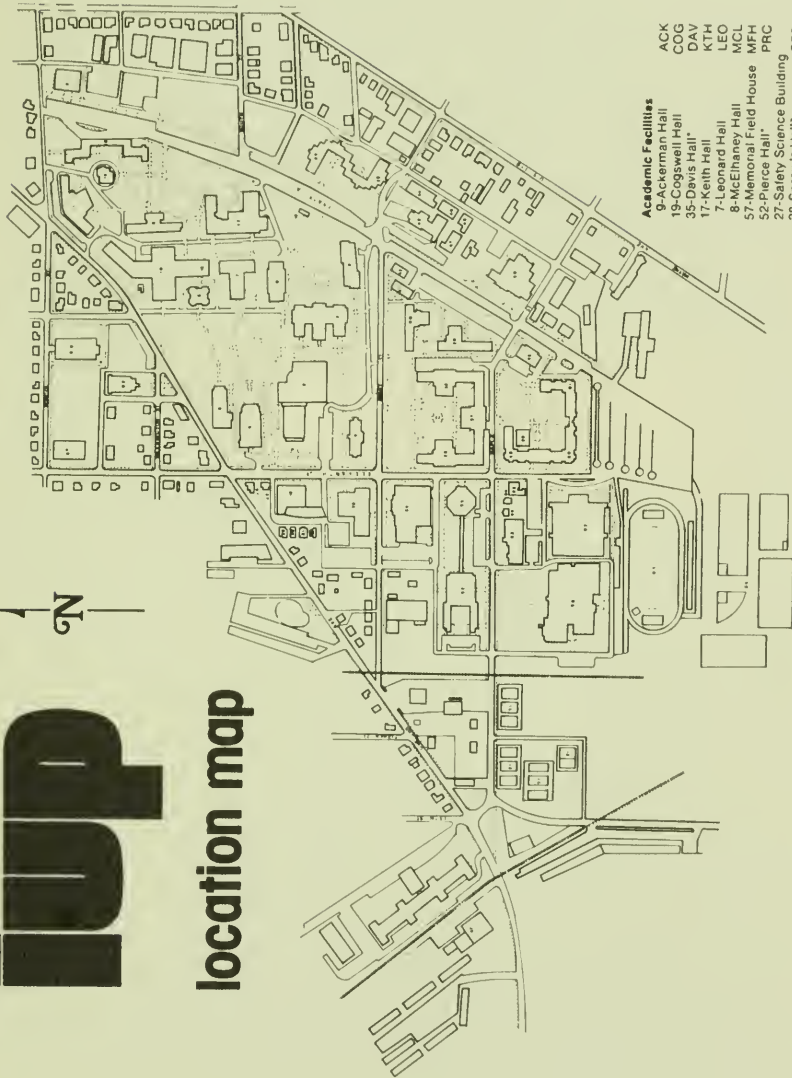
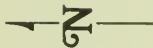
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THE GRADUATE SCHOOL
IUP
Indiana, Pennsylvania 15705



location map



Academic Facilities

- 9-A-Campus Hall
- 19-C-Connell Hall
- 35-Davis Hall*
- 17-Keith Hall
- 7-Leonard Hall
- 8-McEhane Hall
- 57-Memorial Field House
- 52-Pierce Hall*
- 27-Safety Science Building
- 28-Sproles Hall*
- 33-Strouffer Hall*
- 20-Stright Hall*
- 22-Uhlar Hall**
- 5-Waller Hall
- 15-Walsh Hall**
- 14-Weyandt Hall*
- 6-Wilson Hall*
- 56-Zink Hall*

- ACK
- COG
- DAN
- KTH
- LEO
- MCL
- MFH
- PRC
- SPR
- STF
- STR
- UHL
- WLR
- WSH
- WEY
- ZIN

Dining Facilities

- 50-Folger Dining Hall*
- 34-Foster Dining Hall*

Sports and Recreational Facilities

- 64-Athletic Office
- 63-Miller Stadium
- 51-Tennis Courts

Housing Facilities

- 11-Elkin Hall*
- 24-Esch Hall*
- 16-Gordon Hall*
- 39-Langham Hall*
- 60-Lawrence Hall*
- 36-Mack Hall
- 58-Scranton Hall*
- 61-Shaler Hall*
- 38-Stewart Hall*
- 40-Tyburn Hall*
- 25-Wallace Hall
- 13-Whimyre Hall

Administrative Facilities

- 41-Administrative Annex**
- 54-Bruce House
- 53-Campisano House
- 10-Clark Hall
- 26-Hill House
- 1-John Sutton Hall
- 29-Lewis House
- 23-McFarland House
- 21-Pratt Hall*
- 2-President's Apt
- 55-Reschini House
- 31-Richards House
- 32-Stanley House

University Service Facilities

- 43-Boiler Plant*
- 12-Breezezale
- 44-Eicher Maintenance Bldg **
- 45-Fisher Auditorium
- 18-Fletcher Theater
- 42-G-Gordon
- 30-Hosack House
- 50-LUP Post Office and Bulk Mail Center
- 46-Maintenance Garage*
- 49-Maintenance Garage*
- 62-Pechan Health Center*
- 59-Pa. Emergency Mgmt. Agency
- 45-Shop Building*
- 3-Stapleton Library
- 48-Storage Trailer
- 50-University Printing
- 47-University Ship & Receiving

- * Accessible to Handicapped Students
- ** Partially Accessible to Handicapped Students



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